REPORT RESUMES

ED 003 408 24
CONFERENCE TO DEVELOP IN-SERVICE TRAINING ACTIVITIES FOR
RESEARCH PERSONNEL OF STATE DEPARTMENTS OF EDUCATION.
BY- LEE, ALLEN
OREGON STATE DEPARTMENT OF EDUCATION, SALEM
REPORT NUMBER CRP-F-032 PUB DATE 64
EDRS PRICE MF-$0.18 HC-$4.64 116P.

DESCRIPTORS- *EDUCATIONAL RESEARCH, *AGENCIES, *LEADERSHIP, INSERVICE TEACHER EDUCATION, *SCHOOL SYSTEMS, RESEARCH OPPORTUNITIES, RESEARCH PROBLEMS, RESFARCH METHODOLOGY, STATE PROGRAMS, STATE ACTION, SALEM, OREGON

AN INVESTIGATION WAS CONDUCTED--(1) TO DESCRIBE SIGNIFICANT PROBLEMS TO WHICH RESEARCH SHOULD BE APPLIED BY STATE DEPARTMENT OF EDUCATION (SDE) ADMINISTRATORS AND RESEARCH PERSONNEL, (2) TO INCREASE THE COMPETENCE OF SDE RESEARCH PERSONNEL IN THE IDENTIFICATION OF RESEARCH PROBLEMS AND THE DEVELOPMENT OF RESEARCH DESIGNS, (3) TO FORMULATE PROCEDURES FOR INSERVICE TRAINING FOR SDE RESEARCHERS, AND (4) TO FORMULATE PROCEDURES FOR INSERVICE TRAINING OF OTHER SDE PERSONNEL. A CONFERENCE WAS HELD IN SALEM, OREGON, FOR 15 SDE ADMINISTRATORS OR DESIGNEES ON MARCH 26, 1964. SELECTION OF SDE'S WAS BASED UPON REGIONAL CONSIDERATIONS FOR BETTER DISSEMINATION OF CONFERENCE INFORMATION. TWO U.S. OFFICE OF EDUCATION REPRESENTATIVES AND FIVE UNIVERSITY CONSULTANTS ALSO ATTENDED. FOUR MAJOR CONSIDERATIONS PROVIDE THE BASIS FOR PAPERS PRESENTED--(1) EDUCATIONAL RESEARCH AND SDE'S, (2) SIGNIFICANT RESEARCHABLE PROBLEMS, (3) RESEARCH DESIGN AND PROPOSAL WRITING, AND (4) INSERVICE TRAINING NEEDS OF SDE PERSONNEL, INCLUDING RESEARCHERS. THE CONFERENCE SERVED TO SHARPEN THE PROBLEM, STIMULATE EFFORTS AT SOLUTION, AND HELP BRING ABOUT FURTHER DEVELOPMENT ACTIVITIES DESIGNED TO IMPROVE INSERVICE TRAINING EXPERIENCES FOR SDE PERSONNEL. (HB)

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

CONFERENCE TO DEVELOP IN-SERVICE TRAINING ACTIVITIES FOR RESEARCH PERSONNEL OF STATE DEPARTMENTS OF EDUCATION

Cooperative Research Project No. F-032

Chief Investigator: Allen Lee

Oregon State Board of Education
Leon P. Minear, Executive Officer

ED 003408

TABLE OF CONTENTS

Page No.

List of Tables and Illustrations v

PART ONE: PURPOSE AND FOCUS OF THE CONFERENCE

Chapter

I. THE PROBLEM 1

II. OBJECTIVES 3

III. RELATED RESEARCH 5

IV. PROCEDURES 7

PART TWO: CONFERENCE TO DEVELOP IN-SERVICE TRAINING ACTIVITIES FOR RESEARCH PERSONNEL OF STATE DEPARTMENTS OF EDUCATION

Chapter

I. EDUCATIONAL RESEARCH AND STATE DEPARTMENTS OF EDUCATION 13

Orientation of Conference Participants, by Leon P. Minear 13

"A Taxonomy for Educational Change", a presentation by Allen Lee and Leo Myers 15

Settings for Research in State Departments of Education, reports by participants 21

II. SIGNIFICANT RESEARCHABLE PROBLEMS 39

TABLE OF CONTENTS
(continued)

Page No.

Research Problems Described by Proposals Submitted for Discussion by Conference Participants 39

"The Cooperative Research Program", address by Glenn Boerrigter 43

"Research and Development Centers", address by Keith Goldhammer 49

"Controlled Studies of Team Teaching", address by Philip Lambert 55

III. RESEARCH DESIGN AND PROPOSAL WRITING 63

"Common Sense About Experimental Designs", address by Egon Guba 63

Summaries of Study Group Sessions 77

    Research Proposals and Reports 77

    Application of Rigorous Design to Field Testing and Demonstration Projects 78

    Grantsmanship 79

IV. IN-SERVICE TRAINING NEEDS OF STATE DEPARTMENT OF EDUCATION PERSONNEL INCLUDING RESEARCHERS 81

"Current Status of In-Service Training for State Department of Education Personnel", address by John Bean 82

"General In-Service Needs of State Departments of Education", panel discussion 83

TABLE OF CONTENTS
(continued)

Page No.

PART THREE: ANALYSES AND CONCLUSIONS

Chapter

1 ANALYSES OF DATA AND FINDINGS 91

II. CONCLUSIONS AND IMPLICATIONS 95

APPENDICES

A. Conference Participants 103

B. Agenda 109

LIST OF TABLES AND ILLUSTRATIONS

Page No.

A Taxonomy for Educational Change 17

PART ONE

PURPOSE AND FOCUS OF THE CONFERENCE

CHAPTER I

THE PROBLEM

State departments of education are not achieving their potential in terms of conducting worthwhile educational research. The state departments submit relatively few proposals to the U. S. Office of Education, for example, and the average level of sophistication leaves much to be desired. The general lack of pertinent competency of state department of education personnel causes local school people to turn elsewhere for help in solving problems through research. Several conditions have existed in the past which have caused state departments of education to fail to carry on effective research. These may be listed as follows:

A. State departments have traditionally carried on a largely regulatory function which did not seem to call for research endeavor. (The emerging tendency of most state departments, however, is to emphasize leadership and service functions which are clearly dependent on research.)

B. Since state department personnel are generally recruited from among persons with successful public school experience, most persons functioning in research positions in the departments lack sufficient research training and experience.

C. Where research personnel do exist in departments of education, they are generally one or two in number and lack the assistance of skilled, experienced researchers on such matters as formulating research design, stating hypotheses and developing systematic procedures.

D. The lack of smoothly functioning lines of communication and organization for the conduct of research has caused some local school personnel to feel that their research ideas would tend to be wound up in red tape rather than successfully developed and funded.

The dissemination of better organizational arrangements and instructional procedures into widespread use by schools is being energetically pursued by the National Science Foundation, professional associations, philanthropic foundations, and the U. S. Office of Education through such agencies as NDEA and more recently the Cooperative Research

Program. State education departments, partly because of their regulatory functions, are in a position to accelerate or impede the spread of innovations. The expansion of the Cooperative Research Program into Demonstration activities, for example, has limited chance of success unless state departments will either sponsor or endorse first the field testing, and ultimately the dissemination of innovations. A research and development orientation on the part of state departments could aid the cause of more rapid school improvement.

CHAPTER II

OBJECTIVES

It was deemed essential for state department of education researchers and their immediate supervisors from various states to meet with qualified college and university researchers and U. S. Office personnel to discuss the development of positive means for in-service training of researchers in the interest of achieving more fully the potential of such activities as the Cooperative Research Program and enhancing the competence of those engaged in educational research at the state level.

The need for this conference was discussed at a ten-state conference of Chief State School Officers held in Chicago, October 10 and 11, 1963, and at the Annual Meeting of the Council of Chief State School Officers in Portland, November 17 to 21, 1963. Objectives of the conference were drawn from these conversations:

A. To describe for state department of education administrators and research personnel significant problems to which research should be applied.

B. To increase the competence of state department research personnel in the identification of researchable problems and the development of research designs.

C. To formulate procedures for in-service training for state department of education researchers.

D. To formulate procedures for in-service training of other state department of education personnel.

PRECEDING PAGE BLANK-NOT FILMED

CHAPTER III

RELATED RESEARCH

The research function of state departments of education, utilized little thirty years ago, promises to take its place at the center of all department activities. Modern education has progressed to the stage in which guesswork is no longer adequate as the basis for the determination of plans and policies. Facts are necessary. Policies and programs for education more and more are being determined on the basis of objective data, much of which must be obtained by scientific inquiry. This relatively new function is coming to the fore because adequate research has established a firm foundation for educational improvement.[1]

Researchers employed by state departments of education have come to their jobs with relatively little specialized preservice training. This means that the researcher must learn on the job and look to those who have the background, training, and experience to help him analyze and solve the new problems which confront him. He faces a dilemma in this respect, since he is usually the only researcher in the department or is one of the two or three who like himself, have relatively little specialized research training.[2]

One of the ways in which the inadequacy of state department of education researchers has revealed itself is in the low relative rate of proposals submitted to the Cooperative Research Program.[3]

The U. S. Office of Education recognizes that insufficient opportunity for state departments of education to become thoroughly familiar with the Cooperative Research Program accounts, in part, for their inadequate level of participation in the past.[4]

---

[1] Beach, Fred F., The Functions of State Departments of Education, Federal Security Agency, Office of Education (Washington, D. C., 1950).

[2] Beach, Fred F., and Gibbs, Andrew H., The Personnel of State Departments of Education, Federal Security Agency, Office of Education (Washington, D. C., 1952) pp. 18-26.

[3] Bean, John E., Personal Interview with Members of the Oregon State Department of Education Staff, Washington, D. C., July 25, 1963.

[4] Brickell, Henry, Personal Interview with Members of the Oregon State Department of Education Staff, Salem, Oregon, November 8, 1963.

The emphasis being placed upon educational leadership by state departments of education and the need for sound research as a basis for decision making is pointed up in a recent statement by the National Council of Chief State School Officers.[5]

---

[5] National Council of Chief State School Officers, State Department of Education Leadership Through Research. The Council, Washington, D. C., 1963.

CHAPTER IV

PROCEDURES

Rationale and Background. This project was the outgrowth of a need recognized by Leon P. Minear, Superintendent of Public Instruction, and his staff as a result of numerous conferences which took place during the past three years.

Allen Lee, Chief Investigator for the Project, prior to submission of the proposal for Project No. F-032, had occasion to visit each of the 48 mainland state departments of education and had detailed discussions with chief state school officers and their staffs. Oregon State Department of Education personnel conferred on several occasions with officials of the Council of Chief State School Officers.

Superintendent Minear chaired a conference in Chicago on October 10 and 11, 1963, which was attended by chief state school officers, the Executive Secretary of the Council of Chief State School Officers, several university deans, Commissioner Keppel of the U. S. Office of Education, and others (See Exhibit A). This group considered the role of state departments of education and the needs in general. Special attention was given to a discussion and exchange of thinking on research, advanced training, short course needs and the appraisal of state departments of education.

Needs and possible solutions were also discussed at the annual conference at the Council of Chief State School Officers which was held in Portland, November 17 through 21, 1963. The unanimity of thinking and recognition of needs and desirable solutions which was an outgrowth of these varied activities resulted in Project No. F-032.

Date and Location. The conference was held March 24 through March 26, 1964, in Salem, Oregon, and utilized the facilities and services of the Oregon State Department of Education.

Participants. The chief state school officer in each of fifteen states was asked to send two representatives to the conference. These were persons chiefly responsible for pertinent research activity and their administrative superiors (decision-makers).

Selection of participants was based upon due consideration to regional representation so that in-service procedures formulated at the conference would be developed and subsequently implemented on a regional basis. A list of conference participants is attached as Appendix A. States represented included:

1. California
2. Colorado
3. Florida
4. Idaho
5. Illinois
6. Iowa
7. Michigan
8. Maryland
9. Massachusetts
10. Ohio
11. Oregon
12. Pennsylvania
13. Texas
14. Washington
15. Wisconsin

Consultants. The Department of Health, Education, and Welfare, Office of Education provided the following consultants:

John E. Bean, Specialist, State Education Programs, State School Systems Section
Glenn C. Boerrigter, Research Associate, Cooperative Research Branch

University consultants included:

Philip Lambert, Professor of Education, Psychology and Administration, University of Wisconsin
Egon Guba, Director, Bureau of Educational Research, Ohio State University
Keith Goldhammer, Professor of Education, University of Oregon
Jack Culbertson, Executive Director, University Council for Educational Administration
James L. Jarrett, President, Western Washington State College

Conference Program. Formal preliminary planning for the actual details of the three-day conference was conducted at a meeting in Chicago in mid-February. Consultants included Dr. Egon Guba of Ohio State University, Dr. Keith Goldhammer of the University of Oregon, Dr. Philip Lambert of the University of Wisconsin, and Dr. Jack Culbertson of the University Council for Educational Administration, who conferred with the Chief Investigator, Allen Lee.

The agenda was informally discussed again in Chicago with research directors who were attending the American Educational Research Association conference February 20.

The preliminary agenda was discussed with the President and other officials of the Council of Chief State School Officers and received the benefit of their thinking.

On March 23, the official steering committee composed of the consultants (Guba, Lambert, Culbertson, Goldhammer, and the Chief Investigator) met in Salem to finalize and coordinate the results of the previous meeting and numerous telephone conversations. The several individuals involved had each devoted considerable periods of time during the preceding two months to preparation of materials and presentations for the conference.

Appendix B is the official program of the three-day conference.

PRECEDING PAGE BLANK- NOT FILMED

PART TWO

CONFERENCE TO DEVELOP IN-SERVICE TRAINING ACTIVITIES FOR STATE DEPARTMENT OF EDUCATION PERSONNEL

PRECEDING PAGE BLANK-NOT FILMED

CHAPTER I

EDUCATIONAL RESEARCH AND STATE DEPARTMENTS OF EDUCATION

ORIENTATION OF CONFERENCE PARTICIPANTS

Leon P. Minear, Oregon Superintendent of Public Instruction and conference host, welcomed conference participants to Oregon and reviewed the conference objectives, arrangements and procedures.

Emphasizing the importance of having competent research personnel on the staff of a state department of education, he stressed their contribution to the development of quality education and competition for funds available for research and experimentation from many granting agencies.

1. A definite percentage of each state department of education operating budget should be allocated to research and development.

2. Educational research must be a cooperative enterprise. An example of the reward for cooperative effort is the University of Oregon's Research and Development Center, which grew out of many efforts, including a study of the feasibility of a national system of regional research centers conducted by the Oregon State Department of Education in 1962.

3. A state department of education is ideally situated to:

    a. mediate and coordinate the demands of local programs and federal agencies

    b. disseminate and interpret the findings of basic research to local practitioners

4. The importance of providing in-service experiences for state department of education personnel is recognized by many Chief State School Officers. The importance of in-service training for research personnel is evidenced in the 1963 CCSO publication, State Department of Education Leadership Through Research.

5. **As state departments shift their emphasis from regulatory functions and assume responsibility for educational leadership, decision-makers are going to rely heavily upon research to produce facts based upon empirical evidence.**

A TAXONOMY FOR EDUCATIONAL CHANGE

A Presentation by
Allen Lee and Leo Myers
Oregon State Department of Education

The Need for Research and Development in Education

"R and D" stand for the two most important words in American industry--Research and Development, activities which form the basis for most of the outstanding achievements of our country's industries. Companies which show greatest progress and market the largest number of new products are those which budget generously for research and development. Many progressive companies pour back into research and development as much as 10 percent of their net incomes. The automotive industry is a prime example. How long could any of the leaders in this industry compete without extensive research and development? Were it not for active research and development programs, companies in the fields of electronics, drugs, and metal products (to name just a few) would soon be out of business.

Huge sums are annually devoted and profitably expended for research and development in medicine and law, and we are most critical of professional people who fail to make use of the latest findings of research.

The technological advances which have resulted in agriculture and industry have not come about spontaneously or haphazardly. They originated in deliberately planned, carefully organized, and adequately financed programs of research and development. The methods, organizations, and procedures utilized in American industry and agriculture are the objects of worldwide admiration and emulation.

The U. S. Department of Agriculture, the land grant colleges, the agricultural experiment stations, the county agricultural agents and a multitude of farmers cooperate in performing the essential tasks of research and development in agriculture. These agencies and individuals are responsible for research on agricultural problems, whether local, state, national, or international, and have a mutual interest in achieving solutions and improvements. Some federal monies are used, but these activities are largely supported by state funds. This widely dispersed research effort within each state is coordinated and correlated by a state agency to assure a balanced attack on agricultural problems in general.

There has been frank recognition that research must be supported to achieve and maintain the necessary technology for a competitive position in existing markets. Research activity and experimentation are important links in the chain of progressive change in our contemporary society. Investigators are engaged in research and development in many fields with an eye on the future demands of the consumer. Continually, the techniques and tools of research are being used to great advantage and with practical intelligence in solving the problems of agriculture and industry.

But what do we do in education? It is true that we do devote huge sums of public and private capital to one phase of research in education--that is basic research which has traditionally been conducted in an excellent manner by our colleges and universities. Excellent though our basic research has been, however, far too much of it remains on the shelves, pigeonholed and gathering dust. The follow-through activities, the other phases of research--program development and design, dissemination, demonstration, and implementation, have been sadly neglected.

Most curriculum development has been based upon armchair techniques. Decisions have been made, questions have been answered, and policies have been established by experts whose authority stems almost entirely from their own opinions of what is good. There is great need for solving education's problems by far more accurate, authoritative and conclusive methods.

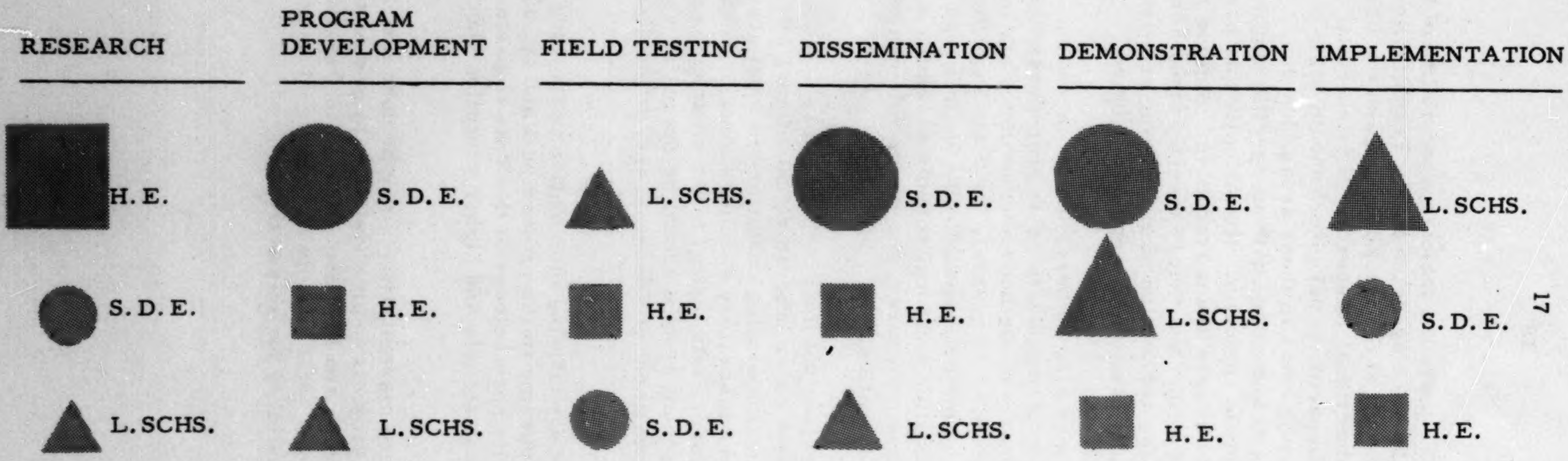
Research and practice in education are too far apart and it is only through research and attention to education change that we can hope to answer positively such questions as:

(1) How do students learn?
(2) What should we teach?
(3) How should we teach it?
(4) When should we teach it?

The creativity and artistry of research and development can be achieved in education as well as in industry and agriculture, but adequate financing and the designation of specific responsibilities are essential.

The chart which follows illustrates proposed division of responsibilities for the several areas of research and research-related activities.

A TAXONOMY OF ACTIVITIES INVOLVED IN EDUCATIONAL CHANGE


RESEARCH
H. E.
S. D. E.
L. SCHS.
PROGRAM DEVELOPMENT
S. D. E.
H. E.
L. SCHS.
FIELD TESTING
L. SCHS.
H. E.
S. D. E.
DISSEMINATION
S. D. E.
H. E.
L. SCHS.
DEMONSTRATION
S. D. E.
L. SCHS.
H. E.
IMPLEMENTATION
L. SCHS.
S. D. E.
H. E.

In the above illustration a square symbol (■) in each instance denotes Higher Education (colleges and universities); the circular symbols (●) represent the State Department of Education; and the triangular symbols (▲) indicate the local schools.

Basic and applied research are the major responsibility of higher education, and especially such agencies as the Teaching Research Division of the State System of Higher Education and the University of Oregon Bureau of Educational Research. It is essential that local school and State Department personnel should begin to assume subordinate and supporting roles in these areas, however. Basic research is the seeking of knowledge without specific application. The motivation is scientific curiosity. Historically this has been primarily a function of colleges and universities. Applied research is a search for new knowledge and theory directly applicable to a specific problem, and the application of all existing knowledge in the search for a practical solution to a specific problem.

Program development may also be described as invention. It is the devising or inventing of organizations or procedures to facilitate incorporation of improved methods and/or materials into ongoing education programs. In general, the State Department of Education should assume major responsibility for this type of activity with higher education and local schools assuming supporting roles. In some instances, of course, the major role can properly be assumed by higher education.

Field testing involves trying out the products of basic research and program development under laboratory conditions, and later under everyday, practical operating conditions in local schools. Initial field testing in the laboratory should be a major responsibility of higher education. Field testing in the environment of an ongoing program in a school system should be the major responsibility of the State Department of Education and/or local school personnel.

Dissemination involves distributing information concerning new ideas, theories, or programs to the professional and lay public. The major responsibility here belongs to the State Department of Education, but both local schools and higher education should have supporting roles.

Demonstration, a part of dissemination, may be done through workshop and "lighthouse" projects to give visibility to new methods and materials for teaching and learning. The State Department of Education, with the aid of local schools and higher education, should have the major responsibility for this activity.

Implementation involves the incorporation of new and proven techniques into ongoing programs in the schools. The State Department of Education must exercise certain legal functions which influence the nature and extent of implementation, and consultants from both the Department and from higher education do exert some influence. The major responsibility for determining what shall be incorporated into an established program belongs, of course, to the local board and administration.

PRECEDING PAGE BLANK- NOT FILMED

SETTINGS FOR RESEARCH IN STATE DEPARTMENTS OF EDUCATION

The setting for research and development within each of the fifteen states represented at the conference was briefly described by each representative to give conference participants an overview of the achievements and challenges which are unique to a few or common to all state department of education research agencies. These reports are summarized here in terms of background, present activities, and major concerns.

California

Background Information

The Research Division of the Department of Education has been in existence for over 35 years, originally established to furnish basic statistical information and handle apportionment of state funds. A reorientation of research efforts took place in 1945 and the staff has grown to 35 with a major RCA data processing installation, supplemented by IBM equipment.

Present Activities

1. Functions legally mandated, including provision of statistical data, calculation and computation of apportionment funds, and the statewide testing program.

2. Services to education agencies, including consultation in program planning, design of collection instruments, computation of information through data processing, and preparation of summary findings and recommendations.

3. Evaluation, including consultation in design of overall evaluation programs, selection of instruments, analysis of results, and implementing results, administration of the statewide testing program.

4. Initiation, stimulation, and coordination of research, with efforts to date focused on teaching personnel, class size, and analysis of school plant facilities, but increasing attention devoted to the area of instruction to achieve better planning, content analysis and more thorough evaluation.

Major Concerns

1. Developing a pattern to encompass the entire research needs of the state with particular emphasis on the instructional program, solving problems of research coordination attributable to size and rapid growth, and problems of administrative organization within the state (1600 school districts with varied degrees of research sophistication)

2. Establishing priorities

3. Initiating and providing continuity to a program of central and field evaluation

4. Implementing research results

5. Encouraging those aspects of research which have overall statewide implication and incorporating results into curriculum and textbooks

6. Encouraging and implementing legislation to improve the research program and provide adequate financing, which has been lacking because of a restrictive definition of research in the budget

Colorado

Background Information

In 1945, the State Department of Education created its first formally titled research position and the primary concern was with the gathering, interpretation and reporting of financial data. In 1956, a division of research was established which expanded its efforts in research to instructional considerations although these efforts, too, were primarily data gathering. Two projects started in 1957, the Migrant Education Project and the Rocky Mountain Area Project (both supported partially by U. S. Office of Education and foundation funds), gave birth to activities which are presently being carried on. Through the National Defense Education Act, Title X, the Division of Research and Statistics expanded to six professional staff members, five statisticians and clerks.

Present Activities

1. Gathering, interpreting and reporting financial data, and implementing provisions of NDEA, Title X.

2. Services to education agencies, as illustrated by the cooperative program carried out by the Rocky Mountain Area Project for Small High Schools in which three colleges, the State Department of Education, twenty-one school districts and The Ford Foundation are cooperating in educational development. An outgrowth of this, the Western States Small Schools Project, has successfully carried on an interstate educational development program with primary emphasis on improvement of educational opportunity in the small school.

3. Initiation, stimulation, and coordination of research, with efforts to date focused on the Migrant Education Project, partially supported by the U. S. Office of Education, and eight research proposals to the U. S. Office of Education or to foundations.

Major Concerns

In recognition of the ever increasing need for cooperative research effort among the state's educational agencies and organizations there was created, in 1960, the Colorado Council on Educational Research. This body of approximately forty members seeks to:

1. Identify research needs

2. Improve the design of research

3. Improve research proposal writing

4. Coordinate research effort among the schools, colleges, universities, and the state's prime educational agency

The Department is presently undertaking to reorganize its Division of Research and Statistics into two divisions: one to be called the Division of Finance and Statistics to be responsible for increased efforts in automatic data processing, data gathering and reporting; the other to be called the Division of Research and Development will be organized to respond to the need for improved research design and related research activity. It will be instructionally oriented and its function that of moving the Department of Education forward in the field of educational research.

Florida

Background Information

The Division of Research, as presently constituted, has a staff of three--a director, a specialist in statistics, and a secretary. Essentially, this is a service division. Its justification for being lies in service to other divisions, state agencies, national agencies, public schools, and the general public.

Present Activities

1. Gathering, interpreting and reporting statistical and financial data.

2. Services to education agencies, including preparation of the biennial budget request and justification, preparation of detailed annual reports for the U. S. Office of Education and the National Education Association, processing questionnaires, serving official and unofficial visitors to the department, participation on state department committees, and cooperation with other governmental agencies; i. e., demographic studies sponsored by the State Board of Health and activities of the Children's Commission.

Major Concerns

1. Improving the services currently provided and providing some services now not possible

2. Increasing personnel

3. Coordinating research activity at the county staff level where 14 counties with three-fourths of Florida's total enrollment have research units which need coordination and consultative services to achieve maximum return from their research effort

4. Providing assistance at the local school level for local research projects

5. Providing for effective analysis and dissemination of research reports and activities

6. Providing assistance and information to education agencies concerning application for research grants

7. Actual conduct of needed research in the areas of school dropouts, effects of overcrowding, teacher evaluation, promotion and non-promotion

8. Increasing service to other State Department of Education divisions

9. Establishing an effective system for utilization of automatic data processing procedures

Idaho

Background Information

The lack of support by the State Legislature makes it impossible at the present time to carry on planned continuous educational research programs. Funds have not been provided which will allow the State Board of Education to employ personnel, purchase equipment or to cooperate with other agencies in carrying out needed projects.

Present Activities

Present research practices are outgrowths of statistical program development, sudden demands by interim legislative committees, or request by lay, service, or educational groups. These are most often brought about by educational climaxes that occur which demand immediate solutions.

Major Concerns

1. Frequent lack of trained and interested persons to carry out research projects

2. Projects too hastily conceived, leading to omissions, poor phraseology (in case of questionnaires), and duplication of effort

3. Lack of time and funds which often results in curtailing projects

4. Inability to substantiate research findings by related projects or follow-ups because of lack of funds

5. Hesitancy on the part of persons in key positions in the area of research at institutions of higher learning to cooperate with other institutions and with the Department of Education in the field of research

Illinois

Background Information

While the Department of Research is located in the Division of Instructional and Pupil Personnel Services, the computer and statistical services are located in the Division of Finance. As an indication of the setting for research in Illinois, the report quotes the Superintendent of Public Instruction. "Enlightened leadership rests, in part, on a firm base of educational research. At the present time, we are thoughtfully and deliberately working toward a comprehensive and continuous educational research and development program appropriate to the Office of the Superintendent of Public Instruction...If resources of our state are to be utilized to best advantage, all organizations and agencies concerned with education should work together in identifying these problems and in developing an appropriate research program."

Present Activities

1. A study of the Public Schools of Illinois, including five categories: characteristics of Illinois; education programs; financial support; organization; and outcomes. The study, in the main, focuses upon a sample of 61 school districts. Three universities are cooperating; the state furnishes funds for five graduate students to receive experience in research at the state level.

2. Cooperation with the Illinois Council for Educational Research and Development, which serves in an advisory capacity with membership from the General Assembly, Illinois Education Association, Chicago Teachers Union, school superintendents, the Illinois Association of School Boards, the Educational Research Bureau at the University of Illinois, Cook County Schools and the University of Chicago Graduate School.

Major Concerns

1. Ineffective dissemination procedures

2. Need for consultants at the state level

3. Need for greater participation in federal research programs and foundation grants for research projects

4. Stimulation of research at the local level

5. **Evaluation of state programs**

6. **Study of the internal organization of the State Department of Education**

Iowa

Background Information

The State Department of Public Instruction has always been committed to the concept that research and development practices are a fundamental necessity for leadership in improving education. Since its basic structural reorganization in 1948, the Department has had a Director of Research, combined with the position of Director of Publications, which may give some indication of the initial emphasis that was placed on research in Iowa. The position is directly responsible to the State Superintendent. Iowa was an early leader in initiating machine data processing at the state level. The majority of research could be classified as "counting and description" research.

Present Activities

1. **Continuing descriptive research procedures that have been a basic element of the research practices through the years, as well as involvement with initial machine data processing techniques.**

2. **Implementing initial steps to provide an organizational structure within the state that can facilitate, through local school districts, the stimulation and dissemination of educational research.**

3. **Implementing initial steps to provide cooperative agreements between agencies and institutions of higher education in Iowa to provide for the most efficient and economical development of the total education research efforts of the state.**

4. **Attempting to reorganize present departmental structure to put more emphasis on the areas of research and development as well as to maintain initial programs of descriptive publications.**

Major Concerns

Proposal to establish an Iowa Educational Information Center to set up and maintain a comprehensive centralized system of continuous, systematic, and routine collection of information about all phases of the educational program. Major purposes will be:

1. To make possible and to facilitate basic educational and psycholocical research of certain types which have heretofore been as highly impractical as they are highly important

2. To provide the public schools and other educational institutions and agencies in the state with the information they need to function most effectively and to provide it at a time and in a form (condensed and summarized) in which it may be most readily interpreted and used

3. To provide a research and development facility through which new and improved informational services of interest to schools everywhere may be developed

Maryland

Background Information

The Division of Research and Development is the newest of seven major divisions in the State Department of Education. Personnel consists of seven research specialists and supporting staff.

Present Activities

1. Gathering, processing, and dissemination of educational informatior

2. Designing and implementing research projects carried out in local school systems with the financial support and professional assistance of the State Department of Education.

3. Developing new programs prior to their becoming a part of the responsibility of an operating division.

4. Improving statistical services as a basis for doing action research, including a cooperative effort with local school systems to reach agreement on terminology and definition based on U. S. Office of Education handbooks but adapted to local needs.

5. Providing the resource persons from the State University for work with local school districts and contracting with the universities for research services.

6. Providing current educational information to local districts and interested lay persons, including publication of a series of fact sheets in a "data bank book".

7. Cataloging research information.

Major Concerns

1. Increasing the effective use of educational information
2. Developing projects which will serve as models for use or adaptation where desirable
3. Conducting studies and research that should provide the basis for better solutions to educational problems which are of concern to the people of the state

Massachusetts

Background Information

None given.

Present Activities

1. Administers provisions of statutes which pertain to tuition, transportation and general school fund reimbursement to the cities and towns of the Commonwealth.
2. Compiles and edits the Annual Report of the Department of Education, a School Laws publication, Educational Directory, and other publications.
3. Serves as a depository for completed Teacher's Oath forms and School Committee Annual Reports.
4. Develops a program of educational research and statistics to assist Massachusetts school officials, the U. S. Office of Education, and other interested groups.
5. Administers Title X of Public Law 864, which provides funds for a data processing unit.

Major Concerns

Not discussed.

Michigan

Background Information

In the Michigan Department of Public Instruction, the Division of Research and Educational Planning was organized less than two years ago. The Division consists of two sections. One is the Curriculum Planning Section and the other is the Research Services Section.

Present Activities

1. The Curriculum Planning Section, made up of 31 state curriculum committees comprising the Michigan Cooperative Curriculum Program, acts in an advisory capacity to the State Superintendent on curriculum matters. Committees are comprised of over a thousand people, including professional educators and lay citizens.

2. The Research Services Section is organized into five programs:

   a. The Data Processing Center operates machines used to handle data on a routine as well as special project basis.

   b. The Studies and Survey program determines the kinds of data needed by all agencies, prepares and tests forms, collects the data they provide.

   c. The Cooperative Research Program, modeled directly after the U. S. Cooperative Research Program, provides the means for careful construction of ideas and research proposals before they are submitted to the U. S. Office, and provides for distribution of reports when projects are completed.

   d. The Educational Media Program, newly organized and not yet implemented.

   e. The Internship Program in Educational Research provides field experience for graduate students who are interested in training for educational research positions.

Major Concerns

1. An initial attempt to interest local educators in the possibility of research for their districts by the Michigan Educational Research Council, and a research project identifying over 1,000 different projects under way in the state involving changes in school

programs, leading to plans for follow-up meetings to determine the best procedure for continuing to provide assistance to local schools

2. Proposed legislation requesting the sum of $100,000 for educational research in Michigan, to be distributed by the State Department to local schools who request assistance in planning or carrying on research projects. (The program will be designed to provide funds to even the poorest districts which lack staff for writing research proposals.)

Ohio

Background Information

The Division of Research in Ohio was created in 1959. It has a staff of three. Its primary function is described as providing research materials to be used in the process of decision making to the State Board of Education, the Department of Education, and the Ohio General Assembly.

Present Activities

1. Collecting, analyzing, and disseminating statistical and financial data.
2. Supplying information to other state agencies, individuals, private organizations.
3. Cooperating in research projects with other divisions of the Department of Education such as: the grading procedure used in honors classes; dropouts; school bus repair cost analyses.
4. Cooperating with other agencies in such research as studies of educational innovations; reorganization; creativity.
5. Serving as liaison between the Department and local districts and the U. S. Cooperative Research Program.

Major Concerns

Not discussed.

Oregon

Background Information

In the belief that part of the operational budget for education in the State should be allocated to education development and research, the legislature, in 1961, provided for an educational improvement fund and approximately $75,000 is deposited to this fund each biennium. In addition to the state's allocation for this purpose, the Department secured funding for The Oregon Program, a design for the improvement of education, from a private foundation in April 1962. This funding provided $3,500,000 for a four year program to provide state level leadership in improvement of classroom instruction and teacher education. The Division of Education Development was established in 1962 to stimulate and coordinate improvement projects among educational agencies. The Department of Education has an NDEA Title VII program and employs a research consultant and research analyst in the School Finance and Statistical Services Section, part of whose work is reimbursed under Title X.

Present Activities

1. Administration of The Oregon Program, including fiscal, operational and evaluative aspects.

2. Initiation and development of proposals to various funding agencies and provision of assistance to Oregon school districts in development of proposals based upon researchable ideas that come from the field.

3. Close cooperation with the Oregon Education Association and the Bureau of Educational Research at the University of Oregon to provide data and help with dissemination of materials.

4. Conduct of an extensive program of in-service training for State Department of Education personnel.

5. Cooperation with and allocation of substantial sums to the Teaching Research Division of Higher Education to subcontract and work with Oregon educators in the development of packages of instructional materials.

Major Concerns

1. The need to develop automatic data processing to the extent that a comprehensive data bank would be available to the Department and to school districts in the state

Pennsylvania

Background Information

Educational research activities are organized under two offices within the Department of Public Instruction, the Area of Research and Development and the Office of Special Projects. It is anticipated that the research operation will be unified in the near future. Current research grants total approximately $722,000 and an additional one-half million dollars has been appropriated by the legislature to support educational studies. The Area of Research and Development is staffed by 18 research specialists and professionals. The Office of Special Projects has a six-member staff.

Present Activities

1. Projects are concerned with effective usage of language laboratory equipment, effectiveness of a driver training simulator, comparative study of new primary arithmetic materials and teaching methods with traditional programs, effects of carpeting on student learning, development of a new formula to guide reimbursement for school bus transportation, school dropouts.

2. Action research, through direct intensive contact with school districts, to prepare curriculum materials and review all proposed curriculum and school building regulation, and rendering curriculum planning and evaluation assistance to the field.

3. Action research projects, including an elementary school program self-appraisal project, a long-range school library development program, an in-service education program under NDEA, an in-service program for secondary school English teachers, a humanities program for academically able high school students, independent study courses for gifted students, taped pattern drills and analysis exercises in English, and a joint program to educate selected teachers to become elementary librarians by the Frick Foundation, the University of Pittsburgh and the Department.

4. With the aid of a foundation grant, assisting the development of a program to improve the educational opportunities for the culturally disadvantaged children.

5. Aiding, encouraging, and improving research on the school district level.

Major Concerns

1. Five major studies supported by the legislature, including: a quality education program for all school children, a simplified subsidy system for local districts, establishment of community colleges, the improvement of vocational and technical education, and the development of a master plan for higher education involving its projected needs. (These studies will involve all agencies of the department.)

Texas

Background Information

The setting for educational research and development in Texas is conceived as involving the total educational resources of the state. Attitudes of local school administrators are believed to be an essential element in bringing about improvements in education through research and experimentation. In order to create an environment for educational change, the Texas Education Agency joined forces with the Texas Association of School Administrators in a program designed to improve the competency of the school administrator as the educational leader of his school and community. Extensive use is made of personnel from colleges and universities who assist the department on special projects. Within the department the staff is organized on a temporary basis for the development and design of special projects without regard for organizational structure.

Present Activities

1. Initiation, stimulation, and coordination of research through conducting study groups for school administrators throughout the state who hold area meetings from four to six times a year, select the program areas to be covered, and make their local resources available for research and development projects.

2. Special projects such as development of 2,000 transparency masters in 10 subject areas to bring about more extensive use of visuals in the instructional program, development of a migrant farm program.

Major Concerns

Although, through reassignment of personnel within the department and through securing expert assistance on a fee basis from college and school

personnel, resources can be marshalled for the development of special programs, there is urgent need for a staff that is highly competent in educational research to follow through on demonstration and experimental projects and evaluate the effectiveness of these activities.

Washington

Background Information

The Research Director is responsible directly to the State Superintendent and a technical panel of 12 people review proposals to the State Department for state funds. A research commission studies the attrition of community college pupils.

Present Activities

1. **$150,000 per biennium is allocated for research in the areas of:**
    - a. **The school dropout**
    - b. **School libraries**
    - c. **Gifted child education**
    - d. **New media**
    - e. **Cooperative Research programs**
    - f. **Vocational-technical education**
    - g. **Reading**
    - h. **Programs for non-college bound**
    - i. **Time and space studies for various flexible scheduling and staffing patterns**
2. **An intern program in the research section**
3. **Consultative-coordinating service--putting educators with problems in touch with those who have skills in the problem areas**

Major Concerns

Not discussed.

Wisconsin

Background Information

Research structure in the Department of Public Instruction is in the developmental stage. Progress in this area under the direction of Mr. Angus P. Rothwell, State Superintendent, started in 1961-62 with a proposal to The Ford Foundation which subsequently awarded a $62,500 grant for Program Development to the Department. This grant is providing the stimulus to survey Program Development in other states and develop a social studies scope and sequence study for Wisconsin. Following this grant, a $240,000 grant from the U. S. Office of Education was awarded in 1963 to develop a new language arts and English program over four years.

These two projects have sparked intensified interest and efforts by the Wisconsin State Department.

Present Activities

Organizational setting for research is developing along the following guidelines:

1. Each division, under the direction of the Assistant State Superintendent, is responsible to identify and develop research needs for areas within the scope of responsibility of the division. The professional staff of the division is encouraged to initiate and develop ideas they have. In the event research proposals originating within a division are successful, the division will carry out the research proposal or plan.

2. Responsibility to coordinate research activities is tentatively assigned to the Assistant Superintendent of the Administrative Services Division and the Project Coordinator for The Ford Foundation Project. The two individuals designated give consultive assistance to Department staff members and actually write up proposals. Activity has been extended to a selected number of local school administrators for selected projects. We are hopeful that this activity and service to local schools will increase.

Major Concerns

1. Lack of legislative interest and funds to develop research activities at the state level

2. Continued organizational plans to emphasize and develop research activity

3. Proposing budgetary inclusion for a highly qualified research person as a staff consultant in the future, to improve the design of research proposals and lend "sophistication" to research activities, to be available to all divisions of the Department and to local schools, and to act as liaison between the Department and other agencies engaged in related or cooperative research activities

PRECEDING PAGE BLANK- NOT FILMED

CHAPTER II

SIGNIFICANT RESEARCHABLE PROBLEMS

RESEARCH PROBLEMS DESCRIBED BY PROPOSALS SUBMITTED FOR DISCUSSION BY CONFERENCE PARTICIPANTS

Participants were asked to bring to the conference samples of research proposals developed by their state departments for submission to a funding agency. These were reviewed in small group discussions concerned with research design and proposal writing which are summarized later in this report. Project titles are merely listed here to indicate the scope of researchable problems being attacked by state departments of education.

Curriculum Development

Field Test (Demonstration B) of a Laboratory Program in Physical Science for Ninth Grade Students, California State Department of Education

A Field Test of Four Approaches to the Teaching of Spanish in Elementary Schools, California State Department of Education

An Evaluation of a Program of French Instruction in Grades 1 Through 5 in a Large City School System, Ohio State Department of Education

Incorporating the Cognition of the Development and Impact of the "Scientific Intelligence" as the Central Theme of the Secondary School Social Studies Curriculum, Ohio State Department of Education

A Program for the Development and Evaluation of a Grammar Curriculum, Based Upon Linguistics, for the Junior High School, Grades 7-9, Texas Education Agency

A Sequential English Language Arts Curriculum in Linguistics, Logic, Semantics, Rhetoric, Composition, and Literary Analysis and Criticism for Grades Kindergarten through Twelve, Wisconsin Department of Public Instruction

Dissemination

A Three Dimentional Saturation Project in Dissemination of Information Regarding Educational Media Under the Provisions of Title VII, Part B of the National Defense Education Act of 1958 (P. L. 85-864), Colorado State Department of Education

Instructional Practices

The Development of Group Tutorial Instructional Packages for Seventh Grade Physical and Biological Science, California State Department of Education

Educational Programming in Simulated Environments for Seriously Emotionally Handicapped Elementary School Children, Maryland State Department of Education

Team Teaching English Across Grade Lines Using Selected Ability Groups and a Theme-Oriented Curriculum, Oregon State Department of Education

An Experiment to Determine if Student Achievement and Attitude Toward Subject Can Be Improved Through Feedback to Teachers, Pennsylvania Department of Public Instruction

Research on the Use of Programed Mathematics Materials as a Means of Achieving the Maximum Potential of Students, Texas Education Agency

Measuring the Effectiveness of the Language Laboratory in Developing Speech Patterns and Listening Comprehension in Modern Foreign Language Instruction in Spanish, Texas Education Agency

Pupil Characteristics

Literacy Education Prerequisite to Occupational Training, Texas Education Agency

A Study of Literacy in Texas as Related to Vocational Training, Texas Education Agency

Project for School Drop-Outs, Texas Education Agency

School Facilities Research

Development of a Manual of Economics of School Building Design Related to Heating, Operating and Maintenance Costs, Ohio State Department of Education

Staff Improvement

The Utilization of a Special Study Institute to Prepare Teachers of the Mentally Retarded for In-Service Training Consultants for Participation in a State Wide In-Service Training Program, Iowa State Department of Public Instruction

An In-Service Course in the English Language, Texas Education Agency

The Development of an Adequate In-Service Program to Prepare Teachers to be Effective Consumers and Utilizers of Educational Television, Texas Education Agency

Surveys

Survey of Five Years of Progress in Public Education in Michigan, Michigan Department of Public Instruction

PRECEDING PAGE BLANK- NOT FILMED

THE COOPERATIVE RESEARCH PROGRAM

An Address by Glenn C. Boerrigter
Research Associate, Cooperative Research Branch
U. S. Office of Education

I would like to take a few minutes to give you a brief overview of the Cooperative Research Program. Then I would like to discuss proposal evaluation, types of proposals supported this fiscal year, and directions the program is taking.

Overview

Cooperative Research came into existence in 1954 under P. L. 531. The program began operating in 1956. It has authority to contract with colleges, universities, and state departments of education for research, demonstrations and surveys in the field of education. This is not a categorical program, as many are.

One million dollars was allocated to Cooperative Research in the first year, and three-fourths of this was mandated for mentally retarded research. Funds have increased each year since to $11,500,000 in 1964. A total of $36,200,000 has been given to educational research by Congress.

Three thousand proposals have been received, and, after May of this year, Cooperative Research will have approved approximately 300 projects. The size of these projects varies from $800 to over $1,000,000. The typical approved project is $50,000 running for two and one-half years. These figures are specifically for basic and applied research.

We have provided support to 148 colleges and universities, as of 1963, and 18 state departments of education.

As of this fiscal year, 1964, the scope of the program has increased considerably. We have added curriculum improvement, demonstration, the small contract program, and the research and development center program. The scope or magnitude of type of project that we can support has, therefore, broadened considerably. It has brought in new educational research and additional personnel--sociologists, anthropologists, social scientists, philosophers, economists--all aiding research to help solve education's problems. Many young researchers are receiving training.

Types of research supported include preschool through college and adult education projects. Some of the areas covered include school finance, education of the gifted, education of the retarded, teacher effectiveness, teaching methods, programed learning, new media, statistical and research methods, learning theory, taxonomic development, curriculum improvement. Under the new demonstration program field testing and dissemination projects are supported.

Process in Proposal Evaluation

Because we receive proposals from many sources (we do not ask people to send us proposals), they must be evaluated rigorously. Seven panels evaluate proposals. There are four panels for basic and applied research, one panel for curriculum improvement programs, one panel for demonstration programs, and one panel for research development center proposals. All contracts are handled differently.

About seven out of every ten proposals are not approved. A staff member studied the types of programs which had been approved during 1957-59 (so, of course, they would all be basic and applied research), categorized the types, and found the percentage of each coming into the program.

Type of Proposal	Percent Approved
Experimental	26
Descriptive	38
History and Development	7
Action research	4
Miscellaneous	6

The percent of total proposals received in each category that have been approved is also a matter of record.

Type of Proposal	Percent Approved
Experimental	30
Descriptive	26
Correlation	35
Instructional development	29
Action research	10
Miscellaneous	29

Apparently there is not a great deal of difference between the type of proposal coming into Cooperative Research and the percent of approval. There are observable conclusions: (a) Seventy percent of the proposals submitted are not acceptable to the reviewers; (b) Acceptability or unacceptability does not appear to be a function of the research method employed by the investigators.

Evaluation of proposals (and again this applies only to basic and applied research) are based on four criteria:

1. Educational significance

   The anticipated outcomes of the project are of potential value to education on a nationwide basis.

2. Design and procedural area

   The problem with which the research proposes to deal is clearly defined. The hypotheses to be tested are well formulated and clearly stated. The procedures spell out vividly the means whereby evidences can be obtained that objectives have been achieved.

3. Economic efficiency

   Fixed-price contracts require panels to evaluate in terms of process and determine efficiency in terms of cost. A proposal is not rated just on cost, but on the relationship of outcome and cost.

4. Personnel and facilities

   Ordinarily panels give the benefit of the doubt. Occasionally, if an investigator proposes to work in an area for which he is obviously not qualified, he is rejected.

Types of Projects Supported this Fiscal Year

Small Contracts. Seventy-five proposals have been approved. Because each has a maximum limit of $9,000 ($7,500 for direct cost and the remainder for overhead), there is a relatively rapid review. Two of three field readers must approve a proposal and a contract will be negotiated. Surveys, preliminary studies, pilot work and/or analysis of existing data or materials are supported in a wide range of problem areas in education.

Demonstration. Examples of projects approved in this category include one dealing with automatic data processing equipment as a teaching aid to help teachers individualize instruction; another concerned a development and demonstration program for teaching the gifted.

Curriculum Improvement. Examples of programs approved in this area include development of: A two-year music program for junior and senior high school, a curriculum in anthropology for elementary grades, an automated reading-arithmetic program for the culturally deprived, and a curriculum in social science for undergraduates in natural science and engineering.

Research and Development Centers. Two have been approved, but the contracts are not yet negotiated.

Basic and Applied Research. Fifty proposals have been approved this year. Project English and Project Social Studies resulted in a number of proposals being submitted. There were others in special education, Braille reading, appraisal of written language for the deaf, standardization of tests and measurements to determine speech and hearing.

We have approved quite a number of projects in programed learning, studies in finance and administration, surveys of expenditures for junior college, a study of support for public schools in large metropolitan areas as compared to schools in suburban areas, studies of satisfaction and aspiration levels of principals, and projects concerning the culturally deprived.

Direction of the Cooperative Research Program

I would speculate that we will continue to give support to investigations in specific problem areas which encourage people to submit projects (such as Project English and Project Social Studies). I suspect we will have a program area in teacher education in 1965. This encourages research to solve problems in a concise area. It seems to me that another area that will be given more emphasis in the future will be that of demonstration and dissemination. For example, we are considering the possibility of supporting more field testing and dissemination projects.

It is conceivable that we will someday support institutes for training teachers and administrators in the areas of innovation which have a great amount of promise for improving education. It is conceivable that we will support demonstration of a model school; and one might speculate that we may eventually support institutes such as a National Institute of Language Disorders, or a National Institute of Teaching Technology, each concentrating on certain problem areas.

The problems to be solved in educational research are these:

1. Dissemination
2. Involving more colleges, universities, and state departments in educational research
3. Recruiting qualified personnel and providing methods for training such personnel.

PRECEDING PAGE BLANK- NOT FILMED

RESEARCH AND DEVELOPMENT CENTERS

An Address by
Keith Goldhammer, Professor of Education,
University of Oregon

I would like to quote from Science, The Glorious Entertainment, recently published by Jacques Barzun, Dean of the College of Liberal Arts of Columbia University, and use this as the text for my remarks:

> If somebody today tells another that he is doing research, the one addressed will invariably exclaim, "How wonderful!" or at least, "How interesting!" Then possibly he or she will ask what the research is about. This attitude is so usual as to seem inevitable. Yet fifty, or even thirty years ago, the idea that doing research was inherently wonderful or interesting was not commonplace, nor would the question, "Research into what?" have come as an afterthought... The change is due to the recent canonization of the name "research," which by becoming familiar has spread a universal faith in the supreme value of the results. In any profession, nothing can be more important than research. To suggest that practice, or teaching, or reflection might be preferred is blasphemous. History records no precedent to this extraordinary addition unless it be that of the Middle Ages to pilgrimage. When it prevailed, I doubt if anyone who was impelled to save his soul by going to a distant shrine was ever restrained by his friends. He would take off his shoes, pick up his stick, and go off with everyone's blessing, just as today the research-bent abandons his occupation, picks up a box of index cards, and is on his way with shining eyes and a two-year grant amid general admiration. The very phrase "do research" shows that it is the act, not the goal, that matters, and though not many think of research as saving their souls, society at large does believe that there is salvation in it.

There is just enough truth in this to make me uncomfortable.

The idea of research centers originated with Roger Bacon in his utopian classic, The New Atlantis. After describing several types of institutes for furthering knowledge that would be developed in his utopia in New Atlantis, and after discussing the kinds of laboratories they would have, he described the kind of personnel that would be available:

> We have twelve that would sail into foreign countries to bring us the books and abstracts and patterns of experiments of all

> other parts. These we call "Merchants of Light." We have three to collect the experiments which are in all the books. These we call "Depredators." We have three to collect the experiments of all the mechanical arts, and also the liberal sciences, and also the practical arts, which are not brought into art. These we call "Mystery Men." And we have three that try new experiments such as themselves think good. These we call "Pioneers" or "Miners." And we have three that draw the experiments of the former four into titles and tables. These we call "Compilers."

Bacon set the state for the kind of continuum that Allen Lee and Leo Myers set forth for you yesterday and which really constitutes the whole range of concerns that are explicit in the concept of the research and development centers.

In this country probably the concept of educational research development centers is taken from the old agriculture experiment station, which was concerned about a very basic problem. It was recognized that there had been an accumulation of knowledge about farming practices and the extent of knowledge about agriculture was beyond the state of practice. One of the concerns was to bridge the gap between knowledge and practice. It was also recognized that there were some serious gaps in knowledge, and new knowledge was needed. So the agriculture experiment station was devised for the purpose of doing some basic research on fundamental problems in order to bridge this gap, or to extend existing knowledge, and to provide a place where knowledge could be collected and where people could write for the information they needed.

This fundamentally, I think, is the concept of the education research and development center. There are five particular questions that are asked, and it is anticipated that research and development centers will provide answers, search for answers, or assist practitioners and scholars in the field to secure their own answers.

"What do we know?" is the first question research and development centers are established to answer. Strangely enough, in a basic field endeavor such as education, knowledge becomes diffuse. Scholars are engaged in research all over the world. There are bits of information here, there, and everywhere about any particular problem that we can think of.

A research and development center will be dedicated to searching within a particular, narrowly defined area and to compiling any knowledge available in this area. Thus, one of the basic reasons for the existence of a research and development center is the fact that it will compile what we actually know and store it for retrieval for use of other scholars.

"What do we need to know?" is our second question. What knowledge do we need that is not now available in this particular area of concern? This will be the stage of defining the basic research that should go on in order to supplement and extend knowledge in a particular area.

"How do we develop the proper technology for practice, consistent with our knowledge?" is the third question. We will have two stages of development in this area. One is the endeavor, the engineering phase. How do we take existing knowledge and develop theories of practice--models to guide our practice so that we can actually develop approaches to the improvement of the practice of the particular profession in which we are engaged? After we have developed a concept of how to engineer this knowledge into a technology, and before we actually put it into practice, we must do some field testing, to enable us to improve the technology and determine the extent to which we reliably recommend the process.

Fourth, "How do we communicate with practitioners in the field?" Studies show that individuals become enamored of the ways in which they have been accustomed to doing things and a large number of them no longer seek newer methods or the more advanced procedures available to them. And so the problem of dissemination is one of the areas with which the research and development center is concerned. It is not only a matter of using what we now know about dissemination techniques and practices, but actually, research and development centers will be charged with the responsibility of attempting to find new and better means of disseminating knowledge and new techniques to people who will be able to use them.

Fifth will be a basic concern for constant evaluation of the state of knowledge and technology to determine whether or not we are accomplishing the goals we had to accomplish.

Thus, we have five basic concerns:

1. Concern for compiling knowledge
2. Concern for basic research
3. Concern for applied research in terms of development
4. Concern for dissemination
5. Concern for evaluation

It is the hope of the U. S. Office of Education Cooperative Research Bureau to establish two research and development centers in the United

States this current year. It is their hope that next year Congress will provide enough money to establish five additional centers, and in the next biennium five additional centers. In the foreseeable future, they hope to establish twelve such centers on a basis that will indicate some suggestion of permanency, either with federal funds or with local contributions. From this standpoint, it is my understanding that initial contracts will be made for a period of five years; and it is the hope that, Congress and the executive branch of government willing, contracts can then be made for an additional five-year period, establishing the centers on a ten-year basis.

Initially, there is no commitment under the present concept for a local contribution. However, there is the feeling that if a research and development center is to be well-established and have the characteristics of permanence and stability, there will have to be rather major commitments made by the local institutions or agencies for putting a maximum amount of local resources into the activities of the center. This is a fundamental factor related to the research and development concept.

Each research and development center that is established will be based upon a particular thing and will concentrate its efforts in a rather narrow zone of activity, so every center will not go off in every direction and duplicate what other centers are doing. One center might be devoted to research concerning culturally deprived children. Another center might be concerned with the problems of education of gifted children. It is possible that zones of activity might be that narrow.

I think one of the most inviting aspects of the research and development center is the fact that researchers will no longer be limited by time and financial backing to short-term projects. Centers will have money available over a continuing period of time and can allocate funds for long-term research endeavors. It will be possible to have a group of "large, stable" researchers available who can be working together in team research endeavors on several different projects, even though their major effort is in only one particular area of concern.

If we can develop programs which are well-devised toward all the objectives with which the center is concerned, we can have a very desirable impact upon not only the practice of education research, but the extension of knowledge.

State departments of education are in a good position to envisage the kinds of roles they can play, not only in the establishment of research and development centers within their own agencies, but also in cooperation with any centers that might be established on university campuses. There is a very vital role which state departments of education will play in the areas of engineering, of technology, of field testing, of development, and of evaluation and dissemination.

I know it is the dream of some individuals who have been responsible for the development of the concept of research and development centers that possibly the day will arrive when we will have such centers in each of the 50 states.

Centers will be nationally oriented at this time, but may become more regionally oriented as more are established.

PRECEDING PAGE BLANK-NOT FILMED

CONTROLLED STUDIES OF TEAM TEACHING

An Address by Philip Lambert, Professor
of Education, Psychology, and Administration,
University of Wisconsin

Among current developments in education, there is one which is causing interest and excitement: team teaching. The experiment at the University of Wisconsin, "Classroom Interaction, Pupil Achievement and Adjustment in Team Teaching as Compared with the Self-Contained Classroom," was concerned with the kinds of teaching and learning relationships, or forms of classroom interaction in the team teaching arrangement, and the differences between these and traditional classroom interaction. A related question studied was student adjustment and student achievement in the team structure as compared to the self-contained classroom. Differences or similarities in interaction might be related to differences (or similarities) in adjustment and achievement.

A two-year team teaching program involving an entire elementary school formed the basis of this study. One additional organization which used the traditional self-contained classroom approach was studied in parallel. Over the two-year period, classroom interaction was studied in several different ways, using different models of student-teacher interaction. Student achievement and personality measures were also varied and subjected to different methods of analysis.

Major emphasis was placed on the methodology of research and the analysis of data. Even comparatively simple questions about teaching and learning processes can necessitate carefully controlled experimentation and complicated statistical analyses.

It is hoped the project will make not only a contribution to our knowledge of team teaching, but also add to our understanding of the methods of research and analysis in the educational field.

The three general hypotheses tested in the experiment were:

1. There is no significant difference in classroom interaction between the self-contained and team organizations.

2. There is no significant difference in student adjustment between the self-contained and team organizations.

3. There is no significant difference in school achievement between the self-contained and team organizations.

In addition to the three primary hypotheses stated above, the following hypotheses were tested in related studies:

1. There is no significant difference in teacher awareness of student characteristics between the teachers of the team and self-contained organizations.
2. There is no significant difference in absenteeism between the students of the team and self-contained organizations.
3. There is no significant difference in frequency of discipline infractions between the classes of the team and self-contained organizations.
4. There is no significant difference in changes in the social structure within the classes between the team and self-contained organizations.

Statistical Methods

The Analysis of Variance. ANOVA has generally been used in the study to determine what differences between the team and self-contained organizations are significant, that is, show differences in means between organizations greater than would be expected by chance.

The types of student or teacher behavior analyzed by the Analysis of Variance method are normally called the factors of the analysis. The factors are the independent variables. Suppose, for example, one wishes to determine whether students do more talking in the team classroom or in the self-contained classroom, and whether there is a difference between the amount of talking by boys and girls, and whether this difference depends upon the difference between organizations. An ANOVA designed for this study would treat the type of organization (team or self-contained), and sex (boys or girls), as independent variables and the dependent variable would be the amount of talking.

Such an analysis would require four measurements on the dependent variable: the amount of talking girls do in the team, the amount girls do in self-contained classes, the amount of talking boys do in the team, and the amount boys do in the self-contained classes.

Populations and Experimental Design

Three different classroom organizations were studied over the two-year period. Two of these were the team and self-contained organizations, both in Washington School, and the third was the self-contained organization at Longfellow School. There were approximately 350 elementary school pupils in the three organizations, about 60 percent of the pupils in grades 1-6 at Washington School, and the remaining 40 percent in Longfellow School. Naturally the number of pupils changed slightly from year to year.

Washington School. The Washington Elementary School is located in Madison, Wisconsin, in an economically depressed area. The majority of the parent population is made up of lower-middle class working people. Twenty percent of the families are currently receiving aid under the Public Assistance Program. At the other end of the spectrum, about ten percent of the parents are in managerial and professional occupations.

Before the initiation of this experiment, there were two classes in each grade of the school with about 20 pupils per class. The experimental design separated the pupil population at Washington, grade by grade, into two sections, an experimental organization and a control organization. Children were assigned to one of these organizations by the use of a table of random numbers.

The control organization continued a modified self-contained classroom arrangement. The modified self-contained classroom was similar to the traditional self-contained classroom with the exception that the children were also exposed to specialists in the fields of physical education, art, and music. In this section of the school there was one class at each grade level, first through sixth.

In the other section of Washington School were two teams, each composed of a team leader, a regular teacher, two graduate interns, and a half-time instructional secretary. These teams corresponded to grades 1-3 and 4-6, and are referred to as the Primary and Intermediate Teams, respectively.

In the team organization all groupings were made according to the demands of each subject, and each child's individual potentialities and interests were considered. In social studies and science, for example, there was a great deal of large-group instruction, with student panels, debates, movies, and visiting resource speakers. In addition there were smaller follow-up, special interest, discussion and work groups which varied in composition according to the material which had been presented. A major concern of the teams was the development and reorganization of a social studies curriculum.

The faculty members were given a choice of whether they wanted to remain in Washington School and to help try out new methods of teaching, or whether they preferred to be transferred to another Madison public school. Only six out of twenty-six staff members chose to be transferred.

The interns were typically people who had gained their first degree in some field other than education and were working towards a master's degree in elementary education. They usually had no school teaching experience prior to their semester internship except for the previous summer session during which they participated in the University Laboratory School.

Each semester two new interns were integrated into the ongoing instructional program as quickly as possible. Their time and activities were divided equally between the two experienced teachers. However, experienced teachers did not teach all subjects. This meant that in a number of subjects they changed places halfway through the semester. For example, one of the interns might have begun by working with the teacher responsible for reading. He would stay the first eight weeks. At the end of the eight-week period, the intern would join the teacher responsible for arithmetic. The interns participated in all teaching duties and responsibilities.

The instructional cost was about the same for the team and self-contained organizations, since in each team one regular teacher's salary was eliminated. This money was divided among the interns, instructional secretary, and team chairmen: Each intern received approximately $1,000 per semester; the half-time instructional secretary for each team received $1,500 per year; and the team chairman received approximately $1,000 per year above his regular salary in recognition of the added responsibilities of his position.

Certain difficulties arose in preserving stability in the Intermediate Team during the two years of the experiment. The original master teacher dropped from the team in the course of the first year due to pregnancy. As a result, communication problems arose between the remaining teachers. In the second year, a new team chairman and master teacher came on the team, who entered while their notion of the team concept was still being developed.

Longfellow School. The second control organization was incorporated in the experiment to measure possible contamination of variables in Washington School. Furthermore, measurements on the second school gave greater power to the statistical analysis. Longfellow School is nearby and comparable in terms of intelligence, achievement, socioeconomic background, administration, and size of pupil population. The Longfellow Elementary School is located in an area which is undergoing considerable urban redevelopment. The majority of the pupils' parents are from the lower middle class. Approximately 70 percent of the parents have jobs which would be considered unskilled or semi-skilled tasks.

Approximately 25 percent of the families are currently receiving aid under the Public Assistance Program. About 10 percent of the parents come from the middle class and have skilled jobs.

In Longfellow School there were six grades with about 30 students in each class.

Teacher Bias in the Study. Care was taken to introduce bias in the selection of staff for this study: Only strong advocates of the team and self-contained organization were retained or employed.

Each group was stimulated by university consultants and the introduction of new teaching aids; that is, overhead projectors, teaching machines, and tape recorders. All groups were stimulated to counteract possible Hawthorne effects.

Intelligence Quotient in the Organization. I. Q. tests were administered before the experiment to make certain the three organizations were evenly matched.

Summary

Each of the general and related hypotheses stated as objectives of the project was tested in an independent experiment, and several of these experiments were broken down into specialized studies. The total Team Teaching Project included, therefore, three main studies, Interaction, Personality, and Achievement; and four side studies, Teacher Awareness, Peer Stability, Absenteeism, and Student Behavior. The three main studies included a number of sub-studies, using different interaction models, different types of tests, and different experimental treatment groups.

The two major aims of the study were: comparison of the team-teaching and self-contained organizations, and sophistication of the instruments of educational research. Many significant results in both areas have been described in the research report, but the following statements will bring together salient features of the project which are interrelated.

1. The personality scales of personal and social adjustment were not found to be sensitive to differences between the three organizations under examination. It is possible there were no significant organizational effects on student personality. However, it should be noted that great variation within organization occurred in the personal and social adjustment scores. This variation, itself, may have been so great as to disguise between-organization effects.

2. Achievement measures, on the other hand, proved to be highly sensitive to differences between the organizations. Significant effects appeared in both years even though the specific achievement tests were changed.

3. The interaction models were sensitive both to differences between organization and grade level differences within each organization.

    a. The use of tapes, however, did not appear to be as satisfactory as within-class observations. The loss of actually seeing the class sessions is undesirable and cannot be compensated for by using tapes.

    b. Between the Withall and Flanders Interaction Models, the Flanders Model was felt to be more appropriate for studying classroom interaction. Frequent observations yield much data in a relatively short period of time while the sequential order of observation permits the study of the ongoing classroom situation as it takes place.

    c. The descriptive analysis suggested by Flanders makes use of the sequential arrangement of the observations and teases much valuable information out of the data.

4. The two sections within Washington School, the experimental team and the control self-contained organization, developed important differences in the two-year period.

    a. The Team began to move ahead of the self-contained classes in achievement the first year, and over achieved the self-contained classes in almost all scores, the second year.

    b. However, achievement scores of the third and sixth grades within the Team leveled off in comparison to the other grades and the control group. Thus, the upper grades of the teams are somewhat hindered in achievement relative to other grades in the same team. It may be reasonable to suppose that these differences would be erased by extending the teams to cover additional grades--possibly even an entire ungraded 1-8 elementary school.

5. In general, the Team did not achieve as well as the second control group, Longfellow Self-Contained. However, the Primary Team first grade in the first year, and first and second grades in the second year over achieved the corresponding grades in Longfellow School. There is reason to

believe the Primary Team was emerging as a strong high-achieving organization.

6. Comparison of the two self-contained control organizations shows that great variation occurred in both interaction and achievement patterns between two organizations of the same teaching structure. This variation points to the possibility of important effects of an uncontrolled teacher variable. Particularly evident are the differences between the third grades of the organizations in both years of the study. However, other unidentified factors in addition to the teacher variable may have contributed to these differences.

7. Both interaction and achievement results pointed to instability within the Intermediate Team. While the Primary Team had continuing experienced teachers, both the team leader and master teacher of the Intermediate Team were replaced in the course of the Project.

8. Differences between the inexperienced interns and experienced certified teachers suggested that a team made up entirely of experienced teachers might be more desirable. There were marked differences between master and intern teachers in awareness of the students' cumulative records, in their disciplinary problems with students, and the side study on student discipline.

General conclusions of the research were these:

1. There are significant differences in classroom interaction between the team and self-contained organizations.

2. There are no significant differences in personal and social adjustment of students between the team and self-contained organizations.

3. There are significant differences in student achievement between the team and self-contained organizations.

Related conclusions of the research can be summarized as follows:

1. There are no significant differences in teacher awareness of student characteristics between the teachers of the team and self-contained organizations.

2. There is no significant difference in absenteeism between the students of the team and those of the self-contained organizations.

7

3. There is no significant difference in the frequency of discipline infractions between the classes of the team and self-contained organizations.

4. There are no significant differences in changes in the social structure within the classes between those of the team and self-contained organizations.

We have also reached some conclusions as a result of our experience with this project, and because we believe educators are beginning to accept too much responsibility for public funds. We used to talk about thousands of dollars for research; now we talk in terms of hundreds of thousands of dollars.

1. It takes about six months to develop a proposal now and usually involves three or four rewrites. We have not structured ourselves to take full advantage of our resources. We are going to appoint a person who can translate into simple English what we want to do. We are setting up an advisory board of our own which will include people who have worked at the national level judging proposals.

2. No single individual knows enough or is the "Rennaisance" man in research. In research, a team is almost mandatory. Wisconsin is now gearing itself to establishing closer relationships with the State Department of Education and professional groups like the AASA and NSSP, NSBA. We are going to draw up a National Code of Ethics of Educational Research and get it ratified by every group in order to get a commitment on what we can and cannot do in the public schools.

CHAPTER III

RESEARCH DESIGN AND PROPOSAL WRITING

COMMON SENSE ABOUT EXPERIMENTAL DESIGN IN EDUCATIONAL RESEARCH

An Address by Egon G. Guba,
Director, College of Education,
University of Ohio

My wish this morning is to rid you of a common misconception--that it is necessary to be a mathematical statistician to grasp the basic principles of design. It shall be my premise that problems of design are basically logical problems that can be understood through logical analysis. I assert that what passes for experimental design in most books is instead a discussion of how to select statistics that are appropriate to a particular design that has already been chosen as useful on some other a priori basis. It is these a priori bases that shall concern me here rather than statistics, although I shall not slight the latter topic entirely.

Purpose of Experimentation

The main purpose of experimentation, as I see it, is to develop understandings, new knowledge; thus, the purpose of experimental design is to make possible unequivocal interpretations and generalizations. There are always a large number of hypotheses that might account for any given phenomenon which we seek to understand. Many of these alternative hypotheses can be rejected on common sense grounds. But there always remain a number of equally plausible hypotheses whose contribution to the phenomenon in question can only be determined through experimentation.

Experimentation cannot, of course, "prove" any given hypothesis. Physicists still have not "proved" that light is either a wave form or corpuscular in nature, although both hypotheses have been entertained over a century.

What experimentation can do is to subject a particular hypothesis to disconfirmation. The assertion that all swans are white can be disconfirmed at once if we can point to a black swan. On the other hand, we build confidence in the truth of the assertion every time we inspect a swan and find it is white. As the number of "tests", i.e., exposures to possible disconfirmation, increases without disconfirmation occurring, our confidence in the assertion increases. Experimentation thus is a systematic procedure for exposing some hypotheses to disconfirmation. Since it cannot "prove" the validity of an assertion, but only build evidence for it through induction, experimentation is not the "ultimate" device for getting at basic understandings that we might desire. However, it is the only device now known to us that will permit us to cope at all with the problem of achieving understandings. It behooves us, therefore, to understand experimentation as a process, even if its technical details (which are largely statistical in nature) escape us.

Basic Definitions

I should like to begin with certain basic definitions that will better establish the nature of experimental design and also differentiate design problems from statistical problems more clearly. These definitions are those proposed by Leslie Kish[1] and I am greatly indebted to his insights in developing this section.

We are surrounded by a world of variables. The height of people, the temperature of the air, the achievement of pupils, the efficiency of teachers, all vary from unit to unit and even in successive determinations on the same unit. This ubiquitous variation is at once the source of many interesting questions as we seek to predict it or account for it, and also the reason why these questions are so difficult to answer, as variations interfere with and overlap one another.

Let us take as an example the problem of determining the relative effectiveness of three methods of teaching spelling. We focus here on two variables: spelling achievement and methods of teaching spelling. Let us define such variables of interest as information variables (i.e., the variables about which we seek information). In the example these information variables happen to consist of an independent or antecedent variable, methods of teaching, which we can manipulate; and a dependent, criterion, or consequent variable, spelling achievement, upon which the effect of manipulating methods will be determined.

The relationship of these two variables cannot be "cleanly" studied, however, because it is impossible to eliminate other related sources of variation in spelling achievement, e.g., the intelligence of the pupil, the enthusiasm of the teacher, etc. How do we know, if we observe that Method 3 seems to produce the highest spelling achievement, that the observed difference is not due to the superior intelligence of the children in this group, or to the superior effectiveness of the teacher or teachers who taught by this method? These other variables, each of which is itself the source of a plausible alternative hypothesis to account for the findings, may be defined as confounding variables.

---

[1] Kish, Leslie - "Some Statistical Problems in Research Design", Amer. Sociol. Rev. 24(1959), 328-38.

Clearly, we must try to rid our experiments of the effects of such confounding variables (or at least take them into account) if these experiments are to have unequivocal meaning, i. e., if they truly are to expose the hypothesis under test to disconfirmation. This elimination of confounding variables can be accomplished in two ways--by control and by randomization. In the example, we might match the subjects taught by each method on intelligence[2], or rotate the teachers so that all teachers taught by all methods. Variables handled in this way may be defined as controlled variables. Or, we might select and assign subjects to the experimental treatments (i. e., methods of teaching spelling) at random. In this case, the effects of the confounding variables are not eliminated or balanced out, but it becomes possible to assess their effect statistically through the production of which statisticians call an "error term". These error terms are simply estimates of the proportion of variation in the experiment produced by such uncontrolled but randomized variables. Variables handled in this way shall be defined as randomized variables.

From this discussion we may deduce the existence of four classes of variables: (1) information variables, (2) confounding variables, (3) controlled variables, and (4) randomized variables. Based upon this classification, I shall make two crucial definitions. First, I shall define the aim of experimental design as the reduction of all confounding variables to the status of either controlled or randomized variables. Second, I shall define the aim of statistics to be the development of methods for estimating the effects of randomized variables, and providing ways for comparing the measured effects of information variables to the estimated effect of randomized variables. Such comparisons, known as tests of significance, are the ways in which we assess the reality or validity of the information which the experiment affords.

From these definitions it is clear that experimental designs and their associated statistics are independent. Experimental design is concerned with controlling confounding variation, while statistics is concerned with estimating the effect of uncontrolled but randomized variation. It is thus not necessary (although undoubtedly helpful) to have a command of statistics before undertaking to resolve design problems. At most, the statistically naive designer may develop a design for which the associated statistics are unknown or impossible to obtain, but it is debatable whether this is a sin more mortal than developing elaborate statistics which have no utility except for answering trivial questions.

---

[2] This is, in fact, not a desirable way to achieve control but is a convenient example.

Criteria for Judging Designs

From the preceding discussion, it becomes possible to spell out certain criteria for judging the value of proposed experimental designs.

First, it is clearly necessary that a *design yield an information estimate* (i.e., findings related to the information variables) that is free from systematic errors. Another way of saying this is to require that the possible influence of rival alternative hypotheses be eliminated.

Second, the *design must permit generalizability*. There is little point in making a determination about the information variables unless it has some meaning beyond the particular sample from which it has derived. Some authors have suggested the term "range of validity" for this criterion.

Third, the *design must yield an error estimate*, i.e., an estimate of the proportion of variation produced by the effects of the randomized confounding variables. Another way to regard this problem is to think of this error estimate as a calculation of the uncertainty of the experiment.

Fourth, the *design must accomplish its aims at a reasonable level of efficiency*. Generally, this means that a proper degree of precision must be attained with a relatively small sample. Efficiency may be measured by noting the precision of the design (i.e., the size of the error estimate) as it relates to expenditure of resources (time, money, subjects, etc.).

Conditions Necessary to Achieve the Criteria

Let us turn now to an examination of the conditions under which these several criteria may be achieved. This is clearly the nub of the design problem.

Conditions necessary to achieve an unbiased information estimate. The first criterion requires that the design be freed from the effects of plausible alternative hypotheses. What are the sources of such rival hypotheses? Campbell[3] in 1957, and Campbell and Stanley[4] in 1963, outlined such sources exhaustively. The seven major sources given by them are as follows:

1. History, that is, the effect of events or experiences that occur simultaneously with the experiment. So for example, the determination of the effect of a certain physics course on attitudes toward science would have been seriously compromised if the orbiting flight by John Glenn had occurred during the period of the course.

2. Maturation, that is, effects of processes normally associated with time, such as growing older, more tired, etc. For example, in a test of the effect of certain drugs on motor coordination, if Drug A is always received by subjects before Drug B, Drug B may appear to be more suppressant of coordination simply because the subjects will be more fatigued.

3. Testing, that is the effect of one testing upon another subsequent testing, because of practice and memory effects, and the like. For example, a course designed to teach certain materials may, upon evaluation, seem to be more effective than it really is because students are "trained" by the pretest to do better on the post-test.

4. Instrumentation, that is, the effect of changes in instrumentation. For example, in grading essay examinations, later papers somehow don't seem as fresh and original as earlier ones, because the reader has altered his perceptions.

5. Regression, that is, the generally noted statistical effect of regression toward the mean in groups chosen because of their extreme position on some variable. For example, procedure designed to improve the reading ability of students selected as low on a reading test will almost certainly appear to be successful, since it is a statistical truism that any extreme group on retest will regress toward the population mean.

---

[3] Campbell, D. T., "Factors Relevant to the Validity of Experiments in Social Settings." Psychol. Bull. 54 (1957), 297-312.

[4] Campbell, D. T., and Stanley, J. C., "Experimental and Quasi-Experimental Designs for Research on Teaching." Chapter 5 in Gage, N. L. (Ed.). Handbook of Research on Teaching, Chicago: Rand McNally, 1963.

6. Differential selection, that is, the effect of using non-comparable groups. If two methods of teaching spelling are to be compared but the subjects assigned to each method are not comparable, we should not be surprised to find a difference in spelling achievement, particularly if the lack of comparability occurs on some crucial variable like intelligence.

7. Subject mortality, that is, the effect of differential losses from experimental treatment groups resulting in non-comparable groups, with the results just noted in the case of differential selection. For example, in comparing the curricula of two schools, we may find the program of a slum district school apparently more effective than that of a suburban school, because of the higher dropout rate in the slum school, which tends to remove proportionately more of the less able students.

These seven sources of alternative hypotheses which are rival to the hypothesis under test constitute major threats to the internal validity of the experiment, that is, to the unequivocality of the information estimates. An ideal design would guard against them all. As we shall see later, this ideal condition is often impossible to meet. This consequence need not be disastrous, however, so long as one remains aware of the ways in which a particular design may fall short. For even an imperfect design may nevertheless expose a hypothesis to disconfirmation. Later, we shall have some further suggestions to make on this point.

Conditions necessary to achieve a proper range of validity. We come now to the second criterion - range of validity, or generalizability. How can we tell to whom or to what our findings apply, assuming that they are internally valid? This question is often referred to as the question of external validity.

There are two aspects to this question: First, we need to know how subjects were selected and assigned to the treatment groups, and second, we need to know under what conditions the experiment was carried out to be sure that nothing occurred to limit the generalizability of the findings in any way. Let us consider each in turn.

In relation to sampling, it must be clear that if findings are to be generalized to some parent group, which I shall refer to as a population, the experiment must be conducted on that population or some suitable sample drawn from it. In general, because of the size of most populations of interest, a sample is necessary.

Now samples can be drawn in a variety of ways, but to be useful, samples must at some stage of their definition be selected by a random process. The major reason for this is that without random sampling we are not able to confirm the absence of biasing factors. Consider, for example, the frequent situation in which so-called "convenience" samples are used. An experimenter wishes to determine which of three methods of teaching spelling is most effective. He selects a number of schools in his immediate vicinity that are willing to cooperate; the requirement of willingness is itself biasing. Further, it is highly likely that the choice of methods to be tested is not accidental; at least one is in all probability a method which the experimenter believes is superior. The volunteer schools may be manned by persons who share this bias, and despite all attempts at objectivity, this bias is likely to show. Thus, random selection is absolutely essential.

But random assignment to treatment groups is also a firm requirement. It is apparent that without random assignment we run the risk of biasing the experimental groups: for example, we may accidentally get all high intelligence subjects into a particular treatment. This effect is less apparent but no less devastating in certain situations, usually called ex post facto experiments, in which assignment to treatment groups is a consequence of self-selection. Suppose we wish to determine the effect of length of schooling on success in life. We may select three groups, one of which completed college, one completed high school, and one completed elementary school. Obviously, assignment to these groups is not random. Indeed, we should not be surprised if these groups exhibited differential success in life, since they undoubtedly differ on scales of ability and economic opportunity. But also obviously, these data are not the same that would have been achieved had we started out with a certain number of subjects, one-third of whom would have been permitted to complete only elementary school, one-third to complete high school, and one-third to complete college. The fact that a "true" experiment would not be possible does not obviate the deficiencies of the ex post facto design.

The mere fact that a sample has been appropriately selected and assigned to treatments is unfortunately no guarantee that the generalizability or external validity of the experiment is preserved. The conditions under which the experiment was conducted may also effect the range of validity. We may again turn to Campbell and Stanley for an explication of certain of these invalidating factors:

1. The reactive or interactive effect of testing, that is, the effect obtained when a subject is sensitized to the experimental treatment as a result of being tested or observed. Thus, a subject who is pretested on his attitudes toward orientals just

before viewing a film designed to change his attitudes in this area is likely to view the film differently than a subject who is not so pretested. Under these circumstances, the findings of an experiment may be generalized only to other pretested groups.

2. Reactive effects of experimental arrangements, that is, the effect resulting from the artificiality of the experimental setting. Perhaps the best example of this is the so-called Hawthorne effect. When subjects know they are part of an experiment they are likely to respond differently than they would otherwise. The results of the experiment may, therefore, be generalizable only to other experimentally involved groups.

3. Multiple-treatment interference, that is, the effect obtained when subjects are exposed to a series of treatments which may affect one another. For example, the same subjects may be used successively to determine the effects upon motor coordination of a series of drugs. If the effect of Drug A has not worn off when Drug B is administered, Drug B may appear more potent. There is thus some doubt whether the results can be generalized except to similarly exposed groups.

There are thus a variety of sources of variations that may confound the external validity of an experiment. Some can be handled by being certain that random selection and assignment have occurred; others will require more elaborate handling. We may also notice that attempts to improve internal validity, as for example by using pre-tests, may actually impair external validity through interactive effects. This possibility further complicates the problem of producing adequate designs.

Conditions necessary for the computation of error estimates. If, in an experimental design, it were possible to control completely all confounding variables, the outcome of the experiment would be completely certain. It is, of course, not possible to achieve this condition, if for no other reason than because the unlimited resources which would be necessary to achieve such control are never available. Some confounding variables, we have already noted, must be randomized. In this case, the effect of these variables is not removed, but is forced into a pattern which is predictable from statistical theory. The statistical estimate of the size of the effect produced by these randomized variables is called an error estimate. It may be worth noting that the term "error" as used in this context does not denote "mistake" or "oversight", but has reference to the influence exerted by uncontrolled but randomized confounding variables. Since the effect is randomized, it exerts only a chance influence on any treatment, although the size of this chance influence may vary from treatment to treatment. Another way to think of the error estimate is to define it as that portion of variance left in a series of data after all other portions that can be identified as stemming from a specific known source or sources are removed. Tests of significance literally compare the information estimate(s) to this error estimate; if the former does not exceed the latter by a sizable amount, we have no basis for asserting that the information estimate reflects anything more than the influence of this random error.

Fairly rigorous conditions must be met if the calculated error estimate is to have any meaning. First, and following obviously from the preceding discussion, the estimate must be based upon randomly sampled units, for if the units are not randomly assigned to treatments, it is probable that effects other than chance are operative with respect to the several treatments. So for example, it is possible that, in a learning experiment, higher I. Q. subjects may be assigned to one treatment than to another, producing biases which certainly will not be reflected in the error estimate.

A second condition is that at least two replications be made of the experiment. Statistically, the error estimate is in fact a variance, that is, a standard deviation squared, and it is obvious that a standard deviation cannot be computed unless there are at least two scores. This is a trivial condition but is often enough disregarded to be serious.

A third and most important condition is what is commonly termed "additivity". Statisticians have not found it possible to solve the mathematical equations underlying tests of significance meaningfully without making the assumption that the real treatment effects, whatever they may be, have equal impact upon the subjects in that treatment group. Statistically speaking, the effect of this assumption is that the performance score of every person in each treatment group is increased (or decreased) by a constant amount which is characteristic of that treatment. The reason why this assumption is necessary is that the error estimate is actually based upon the variance of scores within treatment groups. It is well known that the addition of a constant to each score does not affect the variance of a set of scores; hence, under the additivity assumption, this error variance remains constant and can be used as an invariant benchmark to which the variable information estimates can be compared. It should be apparent that additivity is assumed only in the mathematical derivation and not about the data to which the technique is applied. The data must be tested to see if they meet the assumption; if they do not, the technique is inapplicable.

Conditions necessary to achieve efficiency. A design may be said to be efficient to the extent to which it permits reasonable conclusions to be drawn with a reasonable expenditure of resources. This is largely a matter of the size of the error estimate. If the error estimate is large (reflecting imprecision in the experiment), information estimates will almost certainly be judged as non-significant, regardless of how "real" they may actually be. For unfortunately, the experimenter never knows how things "really" are, but is forced to rely upon his error estimate in drawing conclusions. On the other hand, if the error estimate is too small, we may judge the experiment was too precise for the purpose and, hence, probably wasteful of resources.

The precision of an experiment, which I shall define as inversely proportional to the error estimate, may be affected by many things. One major source of variables which may unnecessarily inflate the error estimate, and hence reduce the precision, is the nature of the field arrangements for conducting the experiment. Lack of rigorous control over such things as the conditions under which the data are obtained, the subjects are instructed, the task is outlined, etc., will certainly contribute to unreliability.

Since the error estimate of a design is determined generally by inter-subject differences, a standard approach to improving precision has been through attempts to reduce these inter-subject differences. The classic means has been the use of matched groups in which the subjects in different treatment groups are made as much alike as possible by pairing on related variables. Thus, in a learning study we might pair subjects on such factors as intelligence, motivation, sex, etc. Another and much preferred method of increasing precision is through the application of so-called covariance techniques, which might for convenience be thought of as a statistical way of matching a posteriori after the data are collected. To accomplish this covariance technique, data must be available on certain related "control" variables which are analogous to the matching variables described above.

Efficiency in design, like efficiency in any other area, is never achieved without cost. If precision is improved, it is always at the expense of resources. Thus, if field controls are to be more rigorous, more time must be spent in planning them and it will cost something to carry them out. If matching is to be done, data will have to be available for the matching variables, and it will typically take time and money to collect these data. This is also true of the control variables in the covariance procedure. Thus, when it is proposed that measures be taken to improve the efficiency of a design, it is most relevant to inquire whether the increase in precision is worth the expenditure of resources necessary to obtain it. Making an already significant finding a little more significant, for example, is rarely much of a bargain.

Some Common Designs

I should like now to glance quickly at certain common designs that have been used in educational research. Again leaning heavily on the excellent treatment afforded by Campbell and Stanley in the source cited above, we may point to three general classes termed (1) pre-experimental designs, (2) true experimental designs, and (3) quasi-experimental designs. Generally speaking, we may define these as (1) designs that we ought to know better than to use, (2) designs that are fine in principle but rarely possible in the real world of educational research, and (3) designs which are often useful even if imperfect in certain respects.

Pre-experimental designs. It seems to make sense that if you want an answer to a question, you should ask it straightforwardly. If, for example, you want to know the characteristics of effective teachers, all you need do is to identify a group of such teachers and make the necessary measurements. So you may find that such teachers are generally over 35, have fifteen or more years of teaching experience, hold the M.A. degree, etc. But if you look closely, you may also note that each of these effective teachers have two arms and a nose, they breathe, sleep at night, and so on. Using this approach, it is impossible to tell which characteristics, if any, are linked to effectiveness, because there is no point of comparison. This design, dubbed the "one-shot case study" by Campbell and Stanley, and which is so obviously bad when it is examined, is nevertheless used so often that it gives one pause.

If a point of comparison is needed, how can we manage that? One way is to get information at several points on the same group. So for example, if we wish to determine the effect of some method of teaching, we simply give a pretest follow with the treatment and a post-test, and assess the gains achieved between the testings. But this pretest-post-test design is also quite inadequate, because it is subject to confounding through many of the factors I outlined above: history, maturation, testing, etc.

A second approach to obtaining a point of comparison is through the use of a second group, often called a control group, which will not receive the experimental treatment but will be tested. But not just any group will do, for unless the experimental and control groups are made equivalent in some way, the data will be subject to confounding through other of the factors I described above, i.e., differential selection and possibly experimental mortality.

True experimental designs. These three designs so briefly described thus suffer from severe deficiencies. But all is not hopeless. Obviously, the control group design can be rendered unequivocal by making the experimental and control groups equivalent. This is most easily accomplished through random assignment of subjects to treatment groups.[5] This so-called post-test-only control group design, in which equivalent experimental and control groups are both tested a posteriori but in which only the experimental group receives the experimental treatment, is completely internally valid. If it lacks anything at all, it is precision, for clearly, groups that are made equivalent randomly may still differ considerably by chance. This possibility will necessarily be reflected in the error estimate produced by the experiment.

A second approach to achieving equivalence is to determine initial status through a pretest. In this design, both experimental and control groups are pretested and post-tested and the experimental group receives the experimental treatment as well. This pretest-post-test control group design is rigorously valid internally, and is superior to the post-test-only control group design in precision, but may suffer in external validity in that the experience of the pretest may sensitize the subjects to the experimental treatment and, hence, alter the data significally.

When such interactions are deemed likely, we may have recourse to a third design originally proposed by Solomon[6] which is literally a combination of the two designs I have just discussed. This design calls for four groups--one experimental and three control groups, and does consider the interaction problem. Its complexity and expensiveness argue against its use unless it is really essential to have high precision with controlled interaction.

These three true experimental designs with certain variations constitute the armamentum of valid designs available to us. The possible variations consist, in the main, of the addition of more treatment or experimental groups; so for example, we may have two, three, or ten different experimental treatments applied to as many experimental groups, contrasted with a particular "control" group. The experimental treatments may be introduced in ways that make possible not only the assessment of their so-called "main" effects, but also of their interactions with each other. So for example, we may wish to know not only which of three methods of spelling is best but also whether it makes a difference whether the subjects being taught are of low, medium, or high intelligence. It is conceivable that one method works best with low intelligence students, while a second method works best with high intelligence students. So-called multivariate designs have been developed which permit such interactions to be tested, and which, in addition, have the valuable features that they answer several questions simultaneously and under more natural conditons. In general, however, such designs are simple (or complex, if you will) extensions of these true experimental designs.

---

[5] Such random assignment is, of course, inordinately difficult to accomplish in most educational research because of the way educational subjects naturally group themselves--in inviolable classroom units.

[6] Solomon, R. L., "An Extension of Control Group Design," Psychol. Bull. 46 (1949) 137-50.

Quasi-experimental designs. The three true experimental designs which I have just described (i.e., the post-test-only control group design, the pretest-post-test control group design, and the Solomon four group design) are, in principle, easy to execute. But in practice, at least in the area of educational research, we often fall short of this goal. In the main, this is so because we deal with human subjects that cannot easily be manipulated to suit our experimental purposes. It is no accident that statistical procedures have reached their highest culmination in the fieldsof agriculture and agronomy. It is one thing to randomly sample the cotton in a field and another to randomly sample the 5th grade children in the New York City Public Schools. While educational researchers often use so-called convenience samples, it is typically not the researchers' convenience which is being served. Consequently, it is useful to have available certain quasi-experimental designs which, while less than perfect, have certain utility. What might that utility be? Let me quote from Campbell and Stanley:

> Science, like other knowledge processes, involves the proposing of theories, hypotheses, models, etc., and the acceptance or rejection of these on the basis of some external criteria. Experimentation belongs to this second phase, to the pruning, rejecting, editing phase. We may assume an ecology for our science in which the number of potential positive hypotheses very greatly exceeds the number of hypotheses that will, in the long run, prove to be compatible with our observation. The task of theory-testing data collection is, therefore, predominantly one of rejecting inadequate hypotheses. In executing this task, any arrangement of observations for which certain outcomes would disconfirm theory will be useful, including quasi-experimental designs of less efficiency than true experiments.[7]

---

[7] Campbell and Stanley, op. cit., p. 205.

Campbell and Stanley, in the Handbook of Research on Teaching which was published about a year ago, discuss ten such quasi-experimental designs. I consider their chapter in this Handbook to be the most important contribution to the methodology of educational research yet made, particularly so because it is written to be responsive to the particular problems which educational researchers face. I cannot do more here than to mention the source; the task of summarizing their contribution is too formidable to attempt. I believe that you will be well rewarded for the time you may spend in studying this reference, and I commend it to you.

Summary

I come finally to the end. What began as common sense, I am sure seems less common now. But for the sake of closure, let me review what I have done.

I tried to indicate that design problems were essentially logical rather than statistical, so that a high level of statistical sophistication is not essential to their solution. I indicated that the purpose of design was to expose a hypothesis to disconfirmation, while ruling out the possible effects of other equally plausible hypotheses. I proposed certain basic definitions of design and statistics based upon four classes of variables --information, confounding, controlled, and randomized. I developed certain criteria for design--freedom from systematic error, range of validity, proper error estimate, and efficiency--and indicated the conditions under which these criteria could be met. I then discussed some common designs in three categories, pre-experimental, true experimental, and quasi-experimental.

I end on the hope that I may not have belabored you with more than you really wanted to hear. I have tried to assemble a little compendium of the most important concepts about design. I hope that I have motivated some of you to look further into this area. I am sure you will find such study rewarding.

SUMMARIES OF STUDY GROUP SESSIONS

Each conference member participated in three one and one-half hour study group sessions. Study groups were kept small by having each group meet three times and rotating participants' schedules so that each participant attended a session on the following topics: (1) research design; (2) research proposals and reports; and (3) grantsmanship. Conference consultants served as discussion leaders and answered questions related to individual research problems. At the conclusion of the third study session, the conference consultants discussed two specific proposals in detail before the entire group and made suggestions designed to improve the competency of the participants in the three areas studied.

Research Proposals and Reports

The discussions in this study group were led by Egon Guba and Jack Culbertson. Participants reviewed some of their own proposals with the consultants within the framework of an outline distributed by Dr. Guba entitled, "Functions and Definitions of Functions of a Research Proposal or Research Report." The outline is co-authored by David L. Clark, Egon G. Guba, and Gerald R. Smith. Some of the major points mentioned in this study group are summarized below:

1. The first task in proposal writing is to establish the problem. Three-fourths of the proposals received by Cooperative Research do not have the problem stated. Objectives are almost never justified.

2. The amount of money requested in a proposal does not influence its acceptance or rejection by Cooperative Research. Readers, who are not employees of the U. S. Office of Education, are concerned only with whether the proposal is priced reasonably--whether it is overpriced or underpriced. Private foundations do not grant funds for small proposals because the administrative costs are too high.

3. Proposals are reviewed on the basis of how each problem is stated, objectives, logical structure or theoretical framework, hypotheses or questions, related science, knowledge and practice, experimental design or investigatory plan, work schedule and resources, findings, conclusions and implications.

4. Many proposals have been so poorly written and fraught with grammatical and typographical errors that they tend to invite a negative response from the reviewing panel.

5. A full description of what is proposed and how it is to be accomplished is mandatory. Details should be given, not vague promises.
6. A proposal must spell out the manner in which information variables are to be differentiated from the confounding variables, whether confounding variables are going to be experimentally controlled or left to operate and the extent of their influence assessed by means of statistical (randomization) techniques.
7. Sampling methods to be used and the population to whom results of the study will apply must be stated in detail.

The Application of Rigorous Design to Field Testing and Demonstration Projects

Study group leaders were Philip Lambert and Glenn Boerrigter. The consultants reviewed individual problems with conference participants. Many specific suggestions made during the discussions can be generalized as guidelines for proposal writers.

1. Determine what disciplines are to be involved in field testing or demonstration, then select experts in the disciplines to provide the proper framework and vehicle for the investigation. Selection of top talent will avoid the danger of having the project itself usurped by the design expert.
2. A review of related literature should sift out only those references that bear on the variables to be handled in the research project.
3. Trained observers and interviewers, using structured, validated guides, can provide data which can be quantified and analyzed in such a way that a rather rigorous design is applied to field testing and demonstration projects where many of the data are subjective in nature.
4. The objectives of a project must tie in directly with the techniques to be employed in the project. For example, if we want to increase pupil achievement, one effective way is to depress pupil response in the classroom. We must cling to our stated objective despite the fact that we might also say that pupil-initiated response in the classroom is desirable.

5. In field testing the matching system is passé because a fundamental question arises as to how much difference must be noted between the behavior of matched groups or individuals subjected to different treatments before we can say it is significant.

6. A proposal should state specifically the kinds of evidence the project will produce which will permit us to discover whether the objectives have been attained.

Grantsmanship

The study group leaders were James L. Jarrett and Keith Goldhammer. Discussions were concerned with mustering human and material resources to investigate a problem area for a specific purpose--knowing when and where to submit proposals, how to use available talent and facilities most effectively, and how to improve the general acceptability of proposals. Key points raised in these discussions were the following:

1. The initial consideration of any agency submitting a proposal for a research grant must be the purpose for seeking a grant. An agency must demonstrate a fundamental commitment and endeavor to secure a grant which will build its own resources. Economic efficiency is of vital importance, and lack of investment by the requesting agency gives those who review proposals a feeling of uneasiness.

2. Agencies should determine how adequate their resources are for accomplishing the project. If they are limited in any way, they can be supplemented by using outside consultants, but proposals should specify the consultants who will be used and their availability.

3. The usefulness of the project should be determined before submitting a proposal. One serious mistake made in many proposals submitted is the lack of "generalizability." Be certain that research problems are not local problems rather than problems common to other situations and locales.

4. There is need to build local competence in proposal writing, but in order for this to be accomplished, teachers need to be given time to become meaningfully involved in research activities and researching. Better communication among various levels of instruction is needed to bridge the gap

between scientific approaches and practical application in the elementary and secondary schools.

5. State departments of education should encourage and advise local districts in formulating research proposals, but the actual details of funding should be handled by the departments. There are several ways to include and provoke local participation. Recognition and rewards for teachers who do submit proposals, development of needed skills by teacher training institutions, and research development conferences are a few of the ways.

6. Funding agencies are quite different and each has a distinct preference for certain types of research proposals. It is important to know these preferences and whether a proposal is more suited to one agency than another.

7. Deadlines for submitting proposals to the Cooperative Research Branch are set for convenience and efficiency of review. However, proposals should be submitted in advance of deadlines, and consulting services which are available from Cooperative Research should be used.

CHAPTER IV

IN-SERVICE TRAINING NEEDS OF STATE DEPARTMENT OF EDUCATION PERSONNEL INCLUDING RESEARCHERS

CURRENT STATUS OF IN-SERVICE TRAINING FOR STATE DEPARTMENT OF EDUCATION PERSONNEL

An Address by John E. Bean, Specialist
Education Programs, State School Systems Section
U. S. Office of Education

Recently I conducted a survey of what state departments of education were doing in the area of educational research and one of the questions asked was this: "Does the department provide a formal program of in-service training in research techniques for department staff members or local school district personnel?" There were more negative answers to this question than to any other item in the questionnaire. I had an unqualified "yes" from no state.

Of the 50 state departments of education polled:

1. Two states have research in-service training seminars or programs in the planning stage--Illinois and Pennsylvania.
2. Seven states have begun programs which are in varying stages of development.
3. Two states are training interns.
4. One state is supplying staff members to districts which request help with local research projects.
5. One state gives informal training in selected districts, working through the university and the Association for Supervision and Curriculum Development.
6. One state has given a seminar in research statistics.

7. One state has sponsored research seminars in school districts. These are jointly planned by the state department of education and three university research bureaus.

Developing in-service training programs is an area where there is a marvelous chance for service in each state.

PANEL DISCUSSION OF IN-SERVICE NEEDS OF STATE DEPARTMENTS OF EDUCATION

John E. Bean, Specialist, Education Programs, State School Systems Section, U. S. Office of Education

Jack Culbertson, Executive Director, University Council for Educational Administration, Columbus, Ohio

Keith Goldhammer, Professor of Education, School of Education, University of Oregon

Angus B. Rothwell, Wisconsin Superintendent of Public Instruction

Panelists' remarks and answers to questions from the floor can be summarized under three general areas of concern.

The Challenge to Recruit and Train Personnel

Many state departments of education are merely collectors of facts that are already outdated. There is no vital relationship between the quality of education in the state and the operations of the state department of education.

If a department is to exist, it must relate itself in some way to the quality of education within the state and this is impossible unless it is constantly concerned about improvement of personnel.

It is later than we think, because we are in an era where, if any constituted agency is not fulfilling its responsibilities, others will develop some creative approaches to fill the vacuum. The state department of education either must develop the quality of personnel needed for its new leadership role, or somebody else will, and the state department will become a strictly vestigal agency, as it has in many states.

For the University Council on Education Administration, which is engaged in dealing with the problem of training administrators, the problem breaks itself down into short-run and long-range programs and the long-range problem is recruiting, selecting and training personnel. What happens to this problem in the next ten years will determine our effectiveness in education and there are implications here for state departments of education.

A recently completed study of administration in a K-12 framework and the numbers needed during the next ten years to fill new positions or to replace those retiring, indicates we will need 62,000 people. One of the problems is that during this period the population from ages 25 to 44 is going to remain about constant while our population in general will increase by one-third. Young, well trained administrators could be in short supply unless a very effective, highly appealing training program is carried on.

There has been a change in the type of individual who is indicating an interest in state department work. There is an attraction to state service for many people. However, the task of acquainting staff members with the problems of state department administration is tremendous.

Educators with many years of experience find they have never been confronted with the kinds of problems they face on a state department of education staff. There is a question as to whether it is possible to prepare for meeting many of these problems. They must be met as they arise.

It is tragic that although there is a University Council on Education Administration to serve administrative needs of school districts, there is not a comparable organization for state departments of education. There is no agency in the country today that is making the state department of education, its responsibilities and recruitment and training need, a matter of major concern.

The Problems of Providing In-Service Opportunities

People who are constantly "giving out" have to have opportunities to recoup their intellectual capital and this we have been tremendously reluctant to admit.

1. Salaries, and the budgetary problems of releasing staff members for academic training, is only one of the deterrents.

2. There is the problem of an extremely stingy attitude toward sabbatical leaves.

3. There is the problem of an extremely parsimonious attitude toward work schedules. People need time to think and to study.

Although we have had a tremendous amount of concern for the classroom teacher, who has an egg crate schedule and has to put out every hour of the day we have not evidenced any concern for education supervisors, who have to put out on a rather high level every day and long into the night. In many cases a parsimonious state is extremely reluctant to grant these people any time for attending conferences during the year.

We could well afford to examine the number of conferences being held all over the country. The percentage of meetings being called is increasing, and these demands, coupled with the demands of our jobs are overwhelming. It probably would be worth our while to examine the possibility of having some staff directly concerned with coordinating the state department in-service program and determining how to meet needs in an organized fashion.

It is time we started shouting out loud about these kinds of problems and what they mean in terms of effective work. We have come to a crossroads. The role of the state department of education has undergone a fundamental shift, it no longer is inspectorial. State departments have the resources to give educational leadership, and maybe this leadership function tends to be conceived in the triangular relationship with higher education and local school districts. There are highly competent personnel in all three agencies and at all levels and the problem is to coordinate a team approach so that a maximum educational opportunity for youngsters will result.

Defining and Providing for Unique Training Needs

One of the dangerous tendencies of any professional group is to begin to specialize and to think that within each of the special subdivisions of the profession the people residing therein can talk authoritatively only with themselves and not with the laymen who surround them. For some time, we have been concerned with the problem of attempting to define what constitutes the common and the unique learnings for each of the categories of supervisory and administrative personnel.

Fundamentally, persons in state departments of education have to be specialists in some areas--people in elementary divisions have to be specialists in elementary education. It has not been proved that their preparatory program for this base of their operation needs to be any different than the program in elementary education for the elementary school principal or the professor of elementary education in colleges and universities.

However, although state departments are moving away from staff generalists and toward specialists because of demands arising for special help in special areas, they must deal with hundreds of school districts, each with unique problems and demands, and there is seldom enough time or staff to do more than just meet the most urgent demands.

For this reason, state department personnel are doers--they put their reputations on the line every day and the decisions that are made are ones that have a direct effect upon the lives and activities of a great many people. Decisions must often be made quickly and must be based upon the knowledge, experience and judgment of the person making them.

Where can state departments of education turn to find competencies to deal with the practical, down-to-earth problems and the political environment in which it must operate? Universities in the past have not shown much interest in state department problems, partially because they have not known what they were. Some are beginning to offer seminars for state department personnel. The Wisconsin State Department of Education has tentatively set up a program so that supervisors in school administration will meet with university staff once a week for in-service experience. This type of thing could be carried farther in the future--even, perhaps, a department at Ohio State for vocational education problems, a department at Columbia on school building problems, and departments at other universities for any number of other problems.

There is obviously a readiness for and interest in short-term training. This is a big subject. This summer the University of Chicago will be offering short-term seminars for state department personnel; superintendents are attending one or two week sessions at universities; internships are being established in state departments for quarters or semesters. We can also think in terms of state department people taking internships in universities to become acquainted with problems of facilitating change through research, field testing and dissemination.

One problem to be solved is that of course content--what kind of content is relevant, useful, and would really contribute to the effectiveness of state department personnel? If state department persons are going to exercise and improve their role in program development, field testing, demonstration, dissemination, and, in basic research itself, they need to learn very clearly and carefully about some of the research that is going on in educational innovation and practice.

At the University of Oregon next fall there will be a seminar on the problem of initiating and managing change in organization. This is very relevant to state department personnel. The University of Oregon has a grant to study the effect of groups in particular situations upon the outcome of school issues. The work that is emanating out of these studies is extremely pertinent to the problems state department personnel facein coping with political environment. The new National Association of Secondary School Principals Yearbook is concerned with studies relating to the factors influencing education decision-making. We need people on the staffs of state departments of education who can be doing these kinds of analyses for the departments.

Another kind of content centers around trying to understand what is happening in society and its impact on schools. We sometimes talk about the problem of the statesman's role in education, which we most often define as his capacity to see what is happening in our society and what this means for educational purpose, organization and instruction. New York University will present a seminar on education and race relations this summer. Other courses might be developed around research procedures, grantsmanship, opportunities for development, opportunities to communicate among local school districts, state departments and colleges to understand what the common problems are and how they might be solved.

There is a problem of technique in short-term training. The University Council for Education Administration has had experience with "simulated situations" which grew out of a contract with the U. S. Office of Education. Simulation means, in this case, going out into a school district, studying it at length, then recreating this school and community through a variety of audio-visual media--films, tapes of teaching and of interaction of administrators and teachers or PTA's, and a lot of written material. This "simulation" was made available for distribution a few years ago and it shows the importance of cooperative research. By the end of the year it will have been used by approximately 12,000 practicing and prospective administrators in this country, Canada, Australia, and Newfoundland.

From this experience we can see implications for building materials which will be relevant, which are concrete, and which do have meaning for administrative personnel. It is one of the more significant developments in stimulating a great deal of work in a number of ways beyond what was originally intended.

We now have materials for secondary school principals, business managers, assistant superintendents for curriculum, and superintendents. These were developed, not with additional funds, but simply through motivation and the interest of professors, practitioners, and those in national organizations such as AASA, ASCD, and NASSP. This seems to offer some possibility for the development of materials to be used in either short-range or long-range in-service training--materials, let's say, with relation to change relationships in school districts, departments of education, and universities.

The use of interns in state departments is something that cannot help but grow, not only because this gives departments the benefit of contacts with universities, but also because it gives interns a taste of state department work. There is no reason why state department people should not be used on interns' graduate committees, especially if interns work on thesis problems within the state department of education.

Use of graduate students is another chance for state departments and universities to cooperate on their problems and bring promising talent close to state department problems and activities.

Finally, we need on-the-job training for state department personnel--opportunities to visit other state departments, internships of two or four or six months working in a state department that is particularly well-advanced in an area where specialists want more training.

PART THREE

ANALYSES AND CONCLUSIONS

PRECEDING PAGE BLANK- NOT FILMED

CHAPTER I

ANALYSIS OF DATA AND FINDINGS

Data pertinent to the problem under attack at this conference, the objectives stated by the project initiators, and the procedures employed in attempting to reach those objectives have been presented on the foregoing pages of this report. The purpose of this chapter is to present analyses of these data and identify certain findings.

Because there are limited statistical data available in a project of this kind an analysis must be subjective and reported in terms of the ways in which the conference activities contributed to solution of the problem.

The problem with which the conference was concerned was that state departments are not achieving their potential in terms of conducting worthwhile and educational research and this is due in part to the general lack of pertinent competency of state department of education personnel. The conference contributed to solution of this problem in the following ways:

A. First, and this is most important in any research, the problem was clearly and concisely stated and conference representatives agreed unanimously that it was significant enough to merit efforts toward solution.

B. Evidences that the problem exists were clearly identified:

   1. The low relative rate of submission of proposals by state departments of education to private and federal funding agencies.

   2. The general lack of state financing of research activities. (Only seven of the twenty-one states engaged in action research have money available to local schools for research and development.)

   3. The general lack of formal in-service provisions for state department of education research personnel. (Only five of the twenty-one states engaged in action research have such provisions.)

C. Several concerns related to the central problem were identified as being common to all the states represented at the conference. These included:

1. Identifying research needs and developing programs to meet those needs.
2. Securing legislation that provides philosophical and financial support for research and development.
3. Recruiting, training, and retaining competent personnel for effective state-level leadership in research and development.
4. Field testing, disseminating and implementing research results.

D. The conference approach was well adapted to attaining the stated objectives of the project. Fifteen of the twenty-one states in the nation that are engaged in action (or applied) research were represented. Each of the states represented sent a research director and his immediate supervisor. The supervisors (decision-makers) who attended were informed concerning the nature and importance of the problem and will be able to lend their influence in helping to bring about needed organizational and in-service training improvements.

E. The climate of objective inquiry that prevailed at the conference permitted the participants to take full advantage of the intensive learning experiences provided and enhanced (within the time limits of a three day conference) their competencies in problem identification, research design and proposal writing. Gains made in this respect are exemplified by the following excerpts from letters received from the participants after the conference:

1. It appears that the Oregon Conference has already resulted in benefit to the Colorado Department of Education in that a revision, written with consideration given to the comments made at the conference, of our New Media proposal to the Title VII-B Section of the U. S. Office is ready for contract signatures.
2. We found this a most worthwhile and beneficial experience.
3. We profited immensely from the meetings and feel that there

will be excellent carry-over resulting in our Office participating in a variety of research projects.

4. I am certain that the knowledge gleaned from your staff, the resource people, and the other state department representatives will be extremely useful in future months.

5. Such conferences should further the growth and development of educational research. Oregon is to be congratulated on its leadership in this area.

   The highlights include the Huntley-Brinkley technique in presenting the discussion on a taxonomy of educational change followed later by the team approach to presenting the Oregon Education Program. I shall follow with a great deal of interest the progress in implementing this program.

6. We are most appreciative of the rich experience afforded us professionally and personally through Oregon's conduct of the recent research design conference at Salem. We feel that the information obtained and the experiences shared will be of inestimable value to the Massachusetts Department of Education.

7. It was an outstanding experience for me in many respects. The opportunity of meeting the consultants which you provided, and the insights I gained into the techniques of research, will be reflected in improved projects from the California State Department of Education, and the county offices and school districts with which we work.

8. I personally gained a great deal from the meeting and from the association with other State Department and University personnel.

9. I am sure that some of the insights gained by this experience will be of material benefit to us in redirecting some of our thinking toward research activities and especially proposals to the U. S. Office. More than ever before, I think we recognize the tremendous gap between what we might consider practical field research problems and those kinds of problems identified by research agencies of universities with their sophisticated methodology and statistical treatments.

   Somehow it seems to me that we must be able to narrow the gap between the field administrator and the university professor so that better appreciation and understanding for each one's role comes about.

10. I hope that this conference will set a precedent for additional regional conferences of this nature over the nation.

F. Conference consultants were carefully chosen on the basis of nationally recognized leadership in educational research and administration. Some of them represented the training grounds for research specialists (colleges and universities). Some represented the funding agencies for research and development projects. These experts were available throughout the meeting and provided valuable guidance in the identification of researchable problems, the study of research design and methodology, and the exploration of alternative in-service training activities.

G. The conference established a camaraderie among researchers and their supervisors from most of the states engaged in action research. The interchange of problems, plans, research materials, etc. will be encouraged because of this new relationship and will serve generally to raise the level of competency of each individual concerned.

H. This project provides evidence of the usefulness of the conference technique for providing intensive in-service training in specific areas of state department of education activity. However, long-range in-service needs cannot be met by this means alone. Alternative ways of providing systematic, long-range in-service training were suggested at the conference and are presented, along with the implications of these suggestions, in the next chapter of this report.

CHAPTER II

CONCLUSIONS AND IMPLICATIONS

There was general agreement among the conference participants and consultants that state departments of education should assume the leadership role in education development because they are ideally situated to:

1. **Mediate and coordinate the demands of local programs and federal agencies**

2. **Disseminate and interpret the findings of basic research to local practitioners**

The interrelationship of research and educational practice was illustrated by means of a taxonomy defining six major steps in effecting change for the continuous improvement of education--research, program design, field testing, dissemination, demonstration, implementation. The state department of education, local school districts, and higher education are directly involved and depending upon the activity, may play a major role or a significant supporting role.

Discussions at the conference made it clear that as state departments shift their emphasis from regulatory functions and assume responsibility for educational leadership, decision-makers are relying more heavily upon research for findings derived scientifically from empirical data.

Specific problems for educational research by state departments of education were identified by conference participants. Most of these problems are in the areas of curriculum development, dissemination, instructional practices, pupil characteristics, school facilities, staff improvement, and evaluation.

Research and Development Centers are being established by the Cooperative Research Program on a regional basis throughout the country and these centers will have five basic concerns: compiling knowledge, conducting basic research, conducting applied research, disseminating findings, and evaluating educational practices. State departments of education will play an important role, not only in the establishment of these centers within their own agencies, but also in cooperating with centers on university campuses.

Funding agencies for research projects differ widely in the types of projects they will support and the types of proposals they will accept. It is important to know these preferences in order that proposals may be directed to the agency, or section within the agency, most likely to approve them.

The scope of research which can be supported by the Cooperative Research Program has expanded considerably and has begun to involve sociologists, anthropologists, social scientists, philosophers, and economists, as well as educators, in an effort to help solve education's problems.

1. Types of research supported by this program cover the whole gamut from school through college and adult education projects.

2. A new demonstration program will underwrite field testing and dissemination, in addition to experimental, descriptive, developmental, and action research projects.

3. Initiators of proposals should be aware that seventy percent of the proposals submitted are not acceptable to the reviewers and acceptability does not appear to be dependent upon the research method employed by the investigators.

4. Acceptance depends upon the review panel's appraisal of proposals in the light of four criteria: (a) educational significance and anticipated outcomes of the research; (b) soundness of the research design; (c) competence of the project personnel; and (d) economic efficiency--the relationship between the anticipated outcome and the cost of the project.

Important guidelines for the preparation of proposals may be summarized as follows:

1. The amount of money requested in a proposal does not influence its acceptance or rejection by Cooperative Research. Readers, who are not employees of the U. S. Office of Education, are concerned only with whether the proposal is priced reasonably--whether it is overpriced or underpriced. Private foundations do not grant funds for small proposals because the administrative costs are too high.

2. The initial consideration of any agency must be the purpose for seeking a grant. An agency must demonstrate a fundamental commitment and endeavor to secure a grant which will build its own resources. Economic efficiency is of

vital importance, and lack of investment by the requesting agency gives those who review proposals a feeling of uneasiness.

3. Adequacy of personnel for accomplishing a project should be determined. If personnel is limited in any way, outside consultants may be used, but proposals should specify the consultants and their availability.

4. The usefulness of the project should be established. One serious mistake made in many proposals submitted is the lack of "generalizability". Research must deal with problems common to other situations and locales.

5. State departments of education should encourage and advise local districts in formulating research proposals, but the actual details of funding should be handled by the departments. There is need to build local competence in proposal writing, but in order for this to be accomplished, teachers need to be given time to become meaningfully involved in research activities and researching. Better communication among various levels of instruction is needed to bridge the gap between theoretical approaches and practical application in the elementary and secondary schools.

It was the concensus that state departments of education must either develop the quality of personnel needed for its new leadership role or somebody else will and state departments will become strictly vestigal agencies. The task of acquainting staff members with the problems of state department administration of education is tremendous, yet there is no agency in the country today that is making the state department of education and its responsibilities, recruitment, and training needs a matter of major concern.

Planning and coordination of effort can provide ways for a state department of education to train personnel in the competencies they need for the practical problems and political environment with which they must cope. Alternative means of providing in-service training were discussed at this conference and the following pertinent conclusions may be drawn:

1. Universities have not shown much interest in state department problems because they have not known what they were. Now, however, they are beginning to offer seminars, short-term training, and internships to acquaint state department people with problems of facilitating change through research, field testing, and dissemination.

2. Decisions are being made about what kind of course content is relevant, useful, and necessary to the effectiveness of state department personnel, for example: initiating and managing change in organization; effects of group interaction on the outcome of school issues; factors influencing education decision-making; understanding cultural changes in our society and their effects upon educational purpose, organization and instruction.

3. "Simulated" situations through audio-visual media are a promising technique for short-term training and materials have been developed by professors, practitioners, and those in national organizations such as UCEA, AASA, ASCD, and NASSP.

4. Internships have been established in two state departments, giving those departments the benefit of increased contacts with universities and also giving interns a new understanding of state department work.

5. Use of graduate students for specific short-term assignments is providing another chance for state departments and universities to cooperate and bring promising talent close to state department problems and activities.

6. On-the-job training can be provided through opportunities to visit, or serve internships of two, four or six months in other state departments which are particularly advanced in an area where more training is needed.

7. Long-range objectives should include establishment of departments or institutes on university campuses in specialized areas of state or local administration.

8. The externship approach to in-service education and on-the-job professional training is certainly worth exploring.

9. A consortium of institutions might provide short-term offerings pertinent to the in-service training needs of state department of education personnel.

Because there appears to be no particular pattern for the in-service training of staff members of state departments of education, nor general agreement on what constitutes an adequate or comprehensive plan for in-service training, this is an area in which the results of research are urgently needed.

This conference served to sharpen the problem, stimulate efforts at solution and help bring about further developmental activities designed to improve in-service training experiences for state department of education personnel. Two major proposals for projects dealing with long-range in-service education have been drafted since this conference was held. One is being prepared by the Executive Secretary of the National Council of Chief State School Officers and one is being prepared by the Oregon State Department of Education.

PRECEDING PAGE BLANK-NOT FILMED

APPENDICES

PRECEDING PAGE BLANK-NOT FILMED

APPENDIX A

PERSONS ATTENDING IN-SERVICE TRAINING CONFERENCE

CALIFORNIA

Johnson, Donald W., Bureau of National Defense, Education Act Administration, State Department of Education, 721 Capitol Avenue, Sacramento 14.

Magnuson, Henry, Bureau of Education Research, State Department of Education, State Education Building, 721 Capitol Avenue, Sacramento 14.

Tashnovian, Peter J., Consultant in Education Research, State Department of Education, State Education Building, 721 Capitol Avenue, Sacramento 14.

COLORADO

Anderson, Frank A., Executive Assistant to the Commissioner, State Department of Education, Denver 2.

Coon, E. Dean, Supervisor of School Publications, State Department of Education, Denver 2.

FLORIDA

Wade, I. Mitchell, Director of Division of Research, State Department of Education, Tallahassee.

IDAHO

Jeffries, Allen P., Administrator of NDEA Title X, Department of Statistics, State Department of Education, Boise.

ILLINOIS

Evenson, Warren, Director of Research, Office of Superintendent of Public Instruction, Springfield.

O'Neill, John H., Assistant Superintendent, Office of the Superintendent of Public Instruction, 302 State Office Building, Springfield.

IOWA

Bechtel, David H., Administrative Assistant, State Department of Public Instruction, State Office Building, Des Moines.

Reese, Fred, Psychological Services Consultant, State Department of Public Instruction, State Office Building, Des Moines.

MARYLAND

Dorn, Wesley N., Director of Research Division, State Department of Education, State Office Building, Baltimore.

Hogan, R. Christine, State Supervisor of Research, State Department of Education, State Office Building, Baltimore.

MASSACHUSETTS

Curtin, Thomas J., Director of Civic Education, State Department of Education, Boston 16.

Magee, John, State Department of Education, Boston 16.

MICHIGAN

Georgiady, Nicholas P., Assistant Superintendent, State Department of Education, Lansing 2.

Kloster, Alexander J., Deputy Superintendent, State Department of Education, Lansing 2.

OHIO

Beynon, Robert R., Director of Research Division, State Department of Education, Columbus.

Culbertson, Jack, Executive Director, University Council for Educational Administrators, 65 S. Oval Drive, Columbus 10.

Guba, Egon G., Director, College of Education, The Ohio State University, 1945 N. High Street, Columbus 10.

Holt, E. E., Superintendent of Public Instruction, State Department of Education, Columbus.

OREGON

Bear, Willard, Assistant Superintendent, State Department of Education, Public Service Building, Salem.

Bradley, Cecil, Consultant of Industrial Education, State Department of Education, Public Service Building, Salem.

Ellingson, James, Director of Secondary Education, State Department of Education, Public Service Building, Salem.

Fish, Larry D., Associate Professor of Education, Oregon College of Education, Monmouth.

Goldhammer, Keith, Professor of Education, School of Education, University of Oregon, Eugene.

Hallberg, Irene, Acting Director of Elementary Education, State Department of Education, Public Service Building, Salem.

Hamill, Robert, Executive Secretary of Legislative Interim Education Committee, 301 State Capitol, Salem.

Leavitt, Jerome, Professor of Education, Portland State College, 1620 S. W. Park, Portland.

Lee, Allen, Assistant Superintendent, State Department of Education, Division of Education Development, 302 Public Service Building, Salem.

Leth, Walter, State Senator, 835 Cascade Drive, NW, Salem.

Martin, George G., Assistant Superintendent, Salem Public Schools, 1309 Ferry Street, SE, Salem.

Minear, Leon P., Superintendent of Public Instruction, 300 Public Service Building, Salem.

Myers, Leo W., Education Development, Research Director, State Department of Education, 302 Public Service Building, Salem.

Nelson, Joe, Student Driver Training Consultant, State Department of Education, Public Service Building, Salem.

Osibov, Henry, Oregon Education Association, 1530 S. W. Taylor Street, Portland 5.

Rice, Gladys, Elementary Education Consultant, State Department of Education, Public Service Building, Salem.

Riggs, Lyle, Elementary Education Consultant, State Department of Education, Public Service Building, Salem.

Skewis, Dale, Secondary Education Consultant, State Department of Education, Public Service Building, Salem.

Spaulding, Jean, Elementary Education Consultant, State Department of Education, Public Service Building, Salem.

Thomas, Lloyd, Research Consultant, Administrative Services Division, State Department of Education, Public Service Building, Salem.

Unruh, Dan, Elementary Education Consultant, Division of Instruction, State Department of Education, Public Service Building, Salem.

Ward, William, Director of Teacher Education, State Department of Education, Public Service Building, Salem.

PENNSYLVANIA

Bonebrake, J. Mahon, Coordinator of Statistics, State Department of Public Instruction, Harrisburg.

Gibboney, Richard A., Deputy for Development, State Department of Public Instruction, Harrisburg.

Hayes, Robert, Bureau of Research, State Department of Public Instruction, Box 911, Harrisburg.

TEXAS

Hitt, J. Warren, Deputy Commissioner, Texas Education Agency, Austin.

Jeffrey, James F., Assistant Director of Finance, Texas Education Agency, Austin.

Kinniell, William T., Director of Instructional Media, Texas Education Agency, Austin.

WASHINGTON

Jarrett, James L., President, Western Washington State College, Bellingham.

Jongeward, Ray E., Research Director, Office of State Superintendent of Public Instruction, Olympia.

WASHINGTON D. C.

Bean, John E., Specialist, Education Programs, State School Systems Section, U. S. Office of Education.

Boerrigter, Glenn C., Research Associate, Cooperative Research Branch, U. S. Office of Education.

Fuller, Edgar, Executive Secretary, Council of Chief State School Officers, 1201 - 16th Street, NW.

WISCONSIN

Buchmiller, Archie, State Department of Public Instruction, Madison.

Lambert, Philip, Professor of Education, Psychology and Administration, School of Education, University of Wisconsin, 345 West Dayton, Madison 6.

Rothwell, Angus B., Superintendent of Public Instruction, State Department of Public Instruction, Madison.

PRECEDING PAGE BLANK-NOT FILMED

APPENDIX B

IN-SERVICE TRAINING CONFERENCE FOR RESEARCH PERSONNEL

Room 6, State Capitol
Salem, Oregon
March 24-26, 1964

GENERAL CHAIRMAN: ALLEN LEE

AGENDA

TUESDAY, MARCH 24, 1964

8:30 a.m.	Registration
9:00 a.m.	Opening Remarks - LEON P. MINEAR Superintendent of Public Instruction
9:30 a.m.	Conference Objectives and Procedures - Conference Staff
9:50 a.m.	Coffee
10:15 a.m.	"A Continuum Including Research" - ALLEN LEE and LEO MYERS
11:00 a.m.	A Panel Discussion on the Foregoing Presentation - ANGUS ROTHWELL, Wisconsin Superintendent of Public Instruction, Moderator E. E. HOLT, Ohio Superintendent of Public Instruction EDGAR FULLER, Executive Secretary, Council of Chief State School Officers GEORGE MARTIN, Assistant Superintendent, Salem Public Schools JEROME LEAVITT, Professor of Education, Portland State College JACK CULBERTSON, Executive Director, University Council for Educational Administration
12:00 noon	Adjourn for Lunch

TUESDAY, MARCH 24, 1964 - contd.

1:30 p.m. . . . . "Our Setting for Research" -
Ten-minute reports:
- California, HENRY W. MAGNUSON
- Colorado, FRANK A. ANDERSON
- Florida, I. MITCHELL WADE
- Idaho, ALLEN P. JEFFRIES
- Illinois, WARREN EVENSON
- Iowa, DAVID H. BECHTEL
- Michigan, NICHOLAS P. GEORGIADY
- Maryland, WESLEY N. DORN

3:00 p.m. . . . . Coffee

3:20 p.m. . . . . Ten-minute reports - contd.
- Massachusetts, THOMAS J. CURTIN
- Ohio, ROBERT R. BEYNON
- Oregon, LEO W. MYERS
- Pennsylvania, RICHARD A. GIBBONEY
- Texas, J. WARREN HITT
- Washington, RAY E. JONGEWARD
- Wisconsin, ARCHIE BUCHMILLER

4:40 p.m. . . . . Announcements

WEDNESDAY, MARCH 25, 1964

8:30 a.m. . . . . Orientation on Group Meetings

8:40 a.m. . . . . "Common Sense About Experimental Designs" (Questions and Discussion) -
EGON GUBA

9:20 a.m. . . . . "Controlled Studies of Team Teaching" (Questions and Discussion) -
PHILIP LAMBERT

10:05 a.m. . . . . Coffee

10:25 a.m. . . . . Group 1 - Room 309

Grantsmanship -
KEITH GOLDHAMMER and
JAMES L. JARRETT, Leaders

Participants

Frank Anderson
Robert Beynon
J. Mahon Bonebrake
Archie Buchmiller
Thomas Curtin
Wesley Dorn
Irene Hallberg
James Jeffrey
Don Johnson
Leo Myers
John O'Neill
Fred Reese

Group II - Room 321

Research Proposals and Reports -
EGON GUBA and JACK CULBERTSON, Leaders

Participants

David Bechtel
E. Dean Coon
J. Warren Hitt
R. Christine Hogan
E. E. Holt
Allen Jeffries
Alexander Kloster
George Martin
Henry Osibov
Peter Tashnovian

WEDNESDAY, MARCH 25, 1964 - Contd.

Group III - Room 416
The Application of Rigorous Design to Field Testing and Demonstration Projects -
PHILIP LAMBERT and GLENN BOERRIGTER, Leaders

Participants

Warren Evenson
Nick Georgiady
Richard Gibboney
Ray Jongeward
William Kinniell
Henry Magnuson
John Magee
Angus Rothwell
Lloyd Thomas
I. Mitchell Wade

12:00 noon . . . . Adjourn for Lunch

1:30 p.m. . . . . Second Round of Group Meetings -
Group I - Room 321
Group II - Room 416
Group III - Room 309
(See Page 3 for group membership I and II, Page 4 for III)

3:00 p.m. . . . . Coffee

3:20 p.m. . . . . "Research and Development Centers" (Questions and Discussion) -
KEITH GOLDHAMMER

3:50 p.m. . . . . The Cooperative Research Program -
GLENN C. BOERRIGTER
Research Associate, Office of Education

4:20 p.m. . . . . Current Status of In-Service Training for State Department of Education Research Personnel -
JOHN E. BEAN
Specialist, State Education Programs, Office of Education

4:35 p.m. . . . . Adjourn

THURSDAY, MARCH 26, 1964

8:30 a.m. . . . . Panel Discussion of Proposals for the Cooperative Research Grants

8:40 a.m. . . . . Third Round of Group Meetings
Group I - Room 416
Group II - Room 309
Group III - Room 321
(See Page 3 for group membership)

9:40 a.m. . . . . Coffee

9:55 a.m. . . . . General In-Service Needs of State Departments of Education -
JOHN E. BEAN
JACK CULBERTSON
KEITH GOLDHAMMER
ANGUS ROTHWELL

10:55 a.m. . . . . Proposal Reactions

11:50 a.m. . . . . Adjourn for Lunch

1:15 p.m. . . . . Buzz Sessions: Small Group Discussions - Proposal Reactions

Group 1 - Room 309
Frank Anderson
Robert Beynon
Thomas Curtin
Wesley Dorn
Don Johnson
John O'Neill
Fred Reese

Group 2 - Room 321
J. Mahon Bonebrake
Archie Buchmiller
Irene Hallberg
James Jeffrey
Leo Myers
Peter Tashnovian

Group 3 - Room 416
David Bechtel
E. Dean Coon
J. Warren Hitt
R. Christine Hogan
Alexander Kloster

THURSDAY, MARCH 26, 1964 - Contd.

Group 4 - Room 6

E. E. Holt
William Kinniell
George Martin
Henry Osibov
I. Mitchell Wade

Group 5 - Room 318

Warren Evenson
Nick Georgiady
Richard Gibboney
Ray Jongeward
John Magee
Henry Magnuson
Angus Rothwell
Lloyd Thomas

2:30 p.m. . . . . General Assembly - Room 6
Five-minute reports from Buzz Sessions*

3:05 p.m. . . . . Panel Discussion - Conference Summary
GLENN BOERRIGTER
JACK CULBERTSON
KEITH GOLDHAMMER
EGON GUBA
JAMES L. JARRETT
PHILIP LAMBERT
LEON P. MINEAR

3:45 p.m. . . . . Adjourn

*Designated research personnel, with the assistance of the study group leaders, will take the reports of buzz sessions and draft a proposal or proposals.